12.0 ECONOMIC RESOURCES

This section describes the existing economic conditions in the Lake Davis project area and assesses the potential local economic impacts from implementation of the proposed project. The local and statewide economic impacts of not implementing pike eradication efforts and potential pike escapement are also addressed. Related socioeconomic resources and topics are addressed in other parts of the EIR/EIS, including the analysis of public services (see Section 13, Public Services) and social conditions and environmental justice (see Section 15, Social Issues and Environmental Justice).

The focus of this section is on those economic resources most likely affected by the Proposed Project and alternatives. The key resource topics analyzed here include local and regional economic indicators, namely economic output, income, and employment; local fiscal resources (i.e., tax revenues); local housing and property values; and non-market economic values attributed to recreation at Lake Davis. At the local level, project impacts on these resources are driven primarily by potential changes in recreation use and tourism and related spending in the Lake Davis area. From a statewide perspective, if the pike were to escape and become established outside the Lake Davis area, including the Sacramento-San Joaquin Delta system, potential drivers of economic impacts would also include changes in commercial and recreational fisheries, as well as water exports in the State Water Project (SWP) and Central Valley Project (CVP) systems.

The basis for the analysis of potential economic impacts of the project at the local and statewide level comes from two separate economic studies conducted for the project. The local economic impact study was prepared by the Center for Economic Development at California State University, Chico (CSUC). The preliminary findings from this study were presented in *The Economic Impact on Plumas County of Alternative Northern Pike Eradication and Management Scenarios for Lake Davis: A Preliminary Report*, which was appended to the Draft EIR/EIS as Appendix I, Attachment 1. Pertinent information from the CSUC study serves as the foundation for the analysis of local economic impacts presented here; however, there are two key differences between the CSUC study and the EIR/EIS: (1) the CSUC study focuses on angling and boating activity, while this section addresses all types of recreation in the Lake Davis, and (2) the CSUC study analyzes a subset and variations of the alternatives analyzed in the EIR/EIS.[1] The economic relationships generated as part of the CSUC study have been extrapolated to conform to the activities, alternatives, and assumptions considered in the EIR/EIS, and therefore, the results differ. The preliminary CSUC study was finalized based on the collection of additional surveys in the summer of 2006. The fundamental economic relationships set forth in the preliminary report were not expected to and did not change, although economic impact estimates were revised downward based on additional surveys of recreational expenditures by non-residents.

CSUC surveyed 23 Portola businesses in the lodging, restaurant, grocery, and other retail sectors regarding the 1997 pike eradication project. Of the 10 businesses that responded, eight of them were in business at the time of the 1997 eradication project. The average decrease in sales for those eight businesses was 8.75 percent for an average of 9.66 months. (See Appendix I, Attachment 1 of this EIR/EIS for the report entitled *The Economic Impact*

[1] The specific alternatives considered in the EIR/EIS were developed subsequent to the economic analysis conducted by CSUC.

on Plumas County of Alternative Northern Pike Eradication and Management Scenarios for Lake Davis: Final Report.) Because of the limited number of responses to the Portola business survey and differences between the 1997 treatment and the current effort, the information resulting from the business survey is of limited value in determining the overall economic impact to the Portola area of the Proposed Project and alternatives. Therefore, the local economic impact analysis in the EIR/EIS was not changed as a result of the business surveys.

The statewide economic impact study was prepared by ENTRIX, Inc., the consultant for the Department of Fish and Game (DFG) and the U.S. Forest Service (USFS) assisting in the preparation of the EIR/EIS. The statewide analysis focuses on potential economic impacts of pike escapement from Lake Davis, including impacts on recreational and commercial fishing from pike predation and impacts to agricultural production values from potential reductions in Delta water exports. Both the local and statewide economic studies are included as a single appendix to this EIR/EIS (see Appendix I, Attachments 1 and 2, respectively).

12.1 Environmental Setting/Affected Environment

This section describes current local economic conditions in the project area. For the purposes of the economic analysis, the local project area (or impact region) is defined as Plumas County. The City of Portola,[2] the nearest community in proximity to Lake Davis, is also considered. Regional impacts would potentially extend throughout the state of California. Information and data on existing economic conditions in the local project area and the state are intended to provide context to the anticipated economic impacts of the Proposed Project and alternatives.

In addition, this section presents baseline economic information attributed specifically to ongoing activities at Lake Davis. This includes data on the contribution of existing recreational activity to the local economy and the fiscal resources of local governments. Other economic parameters that could be directly affected by the Proposed Project and alternatives are also discussed, including the costs related to local water supplies affected by Lake Davis and the costs associated with ongoing operations and maintenance (O&M) at Lake Davis facilities.

12.1.1 Economic Overview of the Project Area

The closest community to Lake Davis is the City of Portola in Plumas County. Although it is the only incorporated city in Plumas County, the City of Portola is a small town along the Middle Fork Feather River in the Sierra Nevada Mountains, with a population of about 2,200 residents. This represents about 10 percent of the total population in Plumas County in 2005 (about 21,200 residents).[3] Considered the economic and service hub for eastern Plumas County, the City of Portola's commercial core includes banks, real estate offices, shopping, restaurants, lodging, and services, which serve both visitors to the community and local

[2] Existing economic data for the City of Portola are presented wherever possible; however, information on certain resource topics is not available at the city level.

[3] More detailed information on local demographics, including population trends and projections, is presented in Section 15, Social Issues and Environmental Justice.

residents. The community is also expanding its residential base with a new, large-scale, housing development that has been designed in accordance with the City of Portola's recently adopted general plan.[4]

Based on its close proximity to Lake Davis and the Plumas National Forest, the local economy, including the economy of the City of Portola, depends extensively on recreation and tourism. Several commercial businesses located near Lake Davis and in the Grizzly Creek canyon below the dam provide recreation-related goods and services. These include, but may not be limited to, Grizzly Store (convenience store, small restaurant, and campground), Lake Davis Cabins (motel), Sleepy Hollow Mobile Home Park, Walton's Grizzly Lodge (summer youth camp), Grizzly Ranch Development (golf course, lodge, and housing subdivision), and Grizzly Creek Ranch (year-round youth camp). In addition, the USFS campgrounds at Lake Davis are managed by Thousand Trails, a private concessionaire.

The following sections provide more detailed information on specific socioeconomic resources potentially affected by the Proposed Project and alternatives.

12.1.2 Economic Base

The current economic base in the project area is represented by employment and income/earnings by industry, as well as total economic output. Section 12.1.5 builds on this discussion, focusing on baseline economic impacts attributed directly to recreational activity at Lake Davis.

12.1.2.1 Employment and Major Industries

Data on total and industry employment provide important insights into the size, strength, and diversity of a local economy. Table 12.1-1 presents historic and current employment levels in the project area.[5] In 2003, total full- and part-time employment in Plumas County was 11,437 jobs (Bureau of Economic Analysis 2003a). This represents less than 0.1 percent of the statewide employment base of 19.7 million jobs. Total employment in Plumas County grew by approximately 6.9 percent (or about 740 jobs) since 2000, which in percentage terms is substantially higher than statewide job growth (0.6 percent) during this same period. On an annual basis, recent employment growth in Plumas County (2.3 percent annually between 2000 and 2003) has outpaced historic levels (1.3 percent per year between 1990 and 2000).

[4] Woodbridge at Portola.

[5] Regional Economic Account data published by the Bureau of Economic Analysis, U.S. Department of Commerce are not available at the city level; therefore, employment data for the City of Portola are not presented.

Table 12.1-1. Employment and Employment Growth (1990–2003)

Area	Employment (Jobs)			Employment Growth (%)	
	1990	2000	2003	1990–2000	2000–2003
Plumas County	9,400	10,695	11,437	13.8%	6.9%
State of California	16,965,207	19,626,033	19,746,205	15.7%	0.6%

Sources: Bureau of Economic Analysis, U.S. Department of Commerce, 2003a

Employment by industry in the local project area is presented in Table 12.1-2. Overall, the largest sector in the Plumas County economy (based on number of jobs) in 2003 was *Services*, which provided over 4,200 jobs and accounted for over one-third of the regional job base (Bureau of Economic Analysis 2003b). Other predominant sectors in the local economy include Federal and state/local *Government* (22.4 percent of the total job base) and *Wholesale and Retail Trade* (about 11.3 percent). In 2003, farm employment in Plumas County provided about 190 jobs (or 1.7 percent of the project area total). Employment patterns at the state level are comparable to Plumas County in terms of major sectors. The largest sector in California is *Services* (48.0 percent), followed by *Wholesale and Retail Trade* (14.0 percent) and *Government* (13.6 percent). (Based on differences in industrial classifications over time, it is difficult to report historical employment trends across industries.)[6]

Although data comparable to those presented above are not available for the City of Portola, useful information on the local economy is available from Zip Code Business Pattern data developed by the U.S. Census Bureau. Based on the primary zip code associated with the City of Portola, there were 126 establishments providing 720 jobs in the City of Portola area in 2003 (excludes public administration jobs) (U.S. Census 2003). Some of these establishments are referenced in Section 12.1.1 in the discussion of recreation-related businesses serving the region.

Table 12.1-2. Employment by Industry (2003)

Industry/Sector [1]	Plumas County		State of California	
	Number of Jobs	Percent of Total	Number of Jobs	Percent of Total
Farm/Agriculture	191	1.7%	310,703	1.6%
Natural Resources and Mining	286	2.5%	271,857	1.4%
Construction	1,058	9.3%	1,079,037	5.5%
Manufacturing	1,053	9.2%	1,640,269	8.3%
Wholesale and Retail Trade	1,294	11.3%	2,762,271	14.0%
Transportation, Warehousing, and Utilities	429	3.8%	603,798	3.1%
Finance and Insurance	326	2.9%	912,713	4.6%
Services	4,235	37.0%	9,485,705	48.0%

[6] Regional Economic Account data published by BEA began using the North American Industry Classification System (NAICS) starting in 2002; pre-2002 data are based on the Standard Industrial Classification (SIC) system.

Table 12.1-2. Employment by Industry (2003)

Industry/Sector [1]	Plumas County		State of California	
	Number of Jobs	Percent of Total	Number of Jobs	Percent of Total
Federal Government	457	4.0%	495,658	2.5%
State/Local Government	2,108	18.4%	2,184,194	11.1%
Total	**11,437**	**100%**	**19,746,205**	**100.0%**

Sources: *U.S. Department of Commerce (Bureau of Economic Analysis 2003b)*

[1]Based on a summary of North American Industry Classification System (NAICS) industry classifications.

Information on the size of the labor force and average annual unemployment rates in the project area since 1990, including the City of Portola, is presented in Table 12.1-3. In Plumas County, the average annual size of the labor force in 2004 was 10,780, with a corresponding unemployment rate of 9.4 percent (California Employment Development Department 2005a). Unemployment in Plumas County has fluctuated since 1990, falling from 9.9 percent in 1990 to 7.0 percent in 2000 and subsequently rising to 9.4 percent in 2004. The local labor force in the City of Portola (1,200 people in 2004) is small relative to its population base, indicating a large retirement population. The local unemployment rate in the City of Portola, currently at 8.7 percent, has been consistently lower than county-wide conditions (California Employment Development Department 2005b). Unemployment in both Plumas County and the City of Portola has been historically higher than statewide conditions; the unemployment rate in California in 2004 was 6.2 percent.

Table 12.1-3. Unemployment (1990-2004)[1]

Area	1990		2000		2004	
	Labor Force	Unemp. Rate	Labor Force	Unemp. Rate	Labor Force	Unemp. Rate
Plumas County	9,470	9.9%	9,760	7.0%	10,780	9.4%
City of Portola [2]	--	--	1,100	6.4%	1,200	8.7%
State of California	15,168,500	5.8%	16,869,700	5.0%	17,552,300	6.2%

Sources: *California Employment Development Department 2005a and 2005b*

[1] Annual unemployment rates are based on non-seasonally adjusted monthly unemployment data.
[2] Labor force and unemployment data for the City of Portola in 1990 are not available.

12.1.2.2 Earnings and Income

Information on total personal income in the project area between 1990 and 2003 is presented in Table 12.1-4. Total personal income generated in Plumas County in 2003 was $593.8 million, which accounts for less than 0.1 percent of total income generated in California (about $1.2 trillion) Plumas County is ranked 48 out of California's 58 counties (Bureau of Economic Analysis 2003a, California Department of Finance 2006). In Plumas County, approximately 62 percent of total income in 2003 was attributed to wage earnings, while at the state level, wage earnings account for a substantially higher proportion of total income (about 79 percent), further indicating that Plumas County supports a relatively larger retiree population. In real terms, total income in Plumas County increased by more than 26 percent

between 1990 and 2003. The rate of local income growth has been less pronounced in recent years (growing by 1.0 percent annually between 2000 and 2003) compared to the previous decade (2.1 percent annual growth between 1990 and 2000). Nevertheless, total local income growth since 2000 has been higher in Plumas County (3.1 percent) than in the state (0.5 percent).

Table 12.1-4. Total Personal Income and Income Growth (1990–2003) [1,2]

Area	Income ($000)			Income Growth (%)	
	1990	2000	2003	1990–2000	2000–2003
Plumas County	$470,215	$575,914	$593,825	22.5%	3.1%
State of California	$912,626,679	$1,179,482,647	$1,184,996,911	29.2%	0.5%

Sources: *U.S. Department of Commerce (Bureau of Economic Analysis) 2003a*

[1] Values in thousands ($1,000) of dollars
[2] Values presented in the tables are in constant 2003 dollars (adjusted based on Consumer Price Index).

Table 12.1-5 presents earnings by industry (a component of total personal income) in the project area in 2003. The measure of earnings by industry focuses on the wages/salaries of employees and proprietor's (or business) income, which are the sources of income most likely affected by the Proposed Project and alternatives. Unlike employment, the *Government* sector had the highest level of earnings in Plumas County at $111.3 million, which accounted for approximately 31 percent of all earnings (Bureau of Economic Analysis 2003c). Other sectors that provide a relatively high proportion of wage earnings in Plumas County include *Services* (23 percent) and *Manufacturing* (12 percent). The fact that the *Services* sector accounts for 37 percent of all jobs in Plumas County, but only 23 percent of earnings, suggests that service-related jobs are relatively low-paying compared to other sectors of the local economy. In California, the *Services* sector accounts for over 40 percent of all wage earnings, more than three times the next largest sector. Farm-related earnings account for 3.6 percent and 0.9 percent of total earnings in Plumas County and California, respectively.

Table 12.1-5. Earnings by Industry (2003)[1]

Industry/Sector[2]	Plumas County		State of California	
	Personal Income ($000)	Percent of Total	Personal Income ($000)	Percent of Total
Farm/Agriculture	$12,982	3.6%	$8,479,185	0.9%
Natural Resources and Mining	$8,444	2.3%	$8,211,819	0.9%
Construction	$35,083	9.6%	$58,287,845	6.2%
Manufacturing	$43,733	12.0%	$115,869,044	12.3%
Wholesale and Retail Trade	$26,372	7.2%	$109,430,756	11.7%

Table 12.1-5. Earnings by Industry (2003)[1]

Industry/Sector[2]	Plumas County		State of California	
	Personal Income ($000)	Percent of Total	Personal Income ($000)	Percent of Total
Transportation, Warehousing, and Utilities	$33,936	9.3%	$34,695,083	3.7%
Finance and Insurance	$9,117	2.5%	$65,069,867	6.9%
Services	$84,447	23.1%	$390,515,323	41.6%
Federal Government	$29,487	8.1%	$32,171,273	3.4%
State/Local Government	$81,821	22.4%	$115,726,004	12.3%
Total	**$365,422**	**100.0%**	**$938,456,199**	**100.0%**

Sources: *U.S. Department of Commerce (Bureau of Economic Analysis) 2003c*

[1] Values in thousands ($1,000) of 2003 dollars.
[2] Industry/sectors based on a summary of NAICS industry classifications

12.1.2.3 Economic Output

Economic output refers to the value of goods and services produced within an economy. Specifically, output is defined as the sum of the value of intermediate inputs (goods and services used to produce a product) and value added (payments to workers, taxes, profits) during production. Total economic output in Plumas County and in California in 2003 was approximately $1.02 billion and $2.48 trillion, respectively (Minnesota IMPLAN Group [MIG] 2003).

12.1.3 Housing and Property Values

Concerns have been expressed related to the possible impact that pike eradication efforts would have on local housing values. An overview of the existing housing stock in the project area is presented in Table 12.1-6. The total housing stock in Plumas County in 2005 was 14,557 units, with just over 1,000 units located in the City of Portola (California Department of Finance 2005). Local vacancy rates range from 10.8 percent in the City of Portola to nearly 33 percent in Plumas County as a whole, suggesting a large presence of vacation and second homes in the county. Local vacancy rates are substantially higher than statewide levels (about 5.9 percent). More pertinent to this analysis are housing values. According to census data, the median value of a home in Plumas County in 2000 was $137,900; in the City of Portola, median home values were lower, at $95,500 (U.S. Census 2000). Current home values are likely substantially higher than values in 2000 based on the rapid increase in the local and statewide housing markets.

Table 12.1-6. Housing Characteristics

Area	Number of Housing Units				Vacancy Rate	Median Value[1] (2000)
	Single-Family	Multi-Family	Mobile Homes	Total		
Plumas County	11,571	771	2,215	14,557	32.9%	$137,900
City of Portola	800	182	63	1,045	10.8%	$95,500
State of California	8,345,494	4,018,486	581,257	12,945,237	5.9%	$119,600

Source: *California Department of Finance (Demographic Research Unit) 2005; U.S. Census 2000*

[1] Median value are based on sample data (Census Table DP-4)

12.1.4 Fiscal Resources

The Proposed Project and alternatives have the potential to affect local economic activity (and therefore business sales), hotel occupancy, and property values, all of which could affect tax revenues received by state and local governments. There may also be changes in public service demands, which could also affect local fiscal conditions. Public services are addressed in Section 14 of the EIR/EIS. In fiscal year (FY) 2002-03, total operating expenditures in Plumas County and the City of Portola were $46.0 million and $4.5 million, respectively (California State Controller's Office 2005a and 2005b).

Taxable sales in Plumas County in FY 2004-05 totaled approximately $223.1 million, an increase of 10.5 percent relative to the previous fiscal year (California State Board of Equalization 2004). In the City of Portola, there were a total of 123 taxable outlets (67 of which were retail stores), generating $16.7 million in taxable sales in 2004. Based on the current sales and use tax rate of 7.25 percent levied in Plumas County, the estimated sales/use tax revenue generated by economic activity in Plumas County in FY 2004-05 was approximately $16.2 million. These revenues are allocated to the state of California and local city/county governments depending on the location of the transaction. Sales and use taxes provided Plumas County and the City of Portola approximately $1.9 million and $193,000 in operating revenues, respectively, in FY 2002-03 (California State Controllers Office 2005a and 2005b).

Based on the large dependence of the local Plumas County and the City of Portola economies on tourism and recreation, transient occupancy tax (or lodging tax) revenues are an important source of fiscal revenues. The lodging tax rate in Plumas County is 9.0 percent. Lodging tax revenues realized by Plumas County totaled just over $1.0 million in FY 2002-03. In the City of Portola, lodging tax revenues were considerably less, at approximately $15,400 (California State Controllers Office 2005a and 2005b).

Property taxes could also be affected by changes in local property values. Property taxes generated approximately $5.5 million in operating revenues for Plumas County and $193,400 for the City of Portola in FY 2002-03 (California State Controllers Office 2005a and 2005b).

12.1.5 Baseline Economic Conditions Attributed to Lake Davis-Related Activities

The manner in which Lake Davis is managed and operated has implications for the local economy. The primary driver of economic impacts under existing conditions is recreation visitation to Lake Davis and the related spending by recreationists that stimulates local economic activity and generates fiscal revenues. These baseline economic and fiscal impacts, addressed below, are important to present before assessing potential economic impacts attributed to the Proposed Project and alternatives.

There are other activities related to the operation and management of Lake Davis that affect local economic conditions. First, the DFG and California Department of Water Resources (DWR) both have management responsibility at Lake Davis. The DWR manages water operations at Lake Davis as part of the State Water Project (SWP) system, while the DFG actively manages the fish and wildlife resources in and around the reservoir. The DFG opened a field office in the City of Portola to specifically address the northern pike management issue, and staff from this office actively engage in northern pike control and containment activities. In addition, the USFS manages lands surrounding Lake Davis as part of the Plumas National Forest (PNF). Expenditures by these public agencies in the local economy, including staffing costs, result in direct and indirect economic benefits (as measured by economic output, jobs, and income) and tax revenues for the region.

In addition, DFG is implementing a range of local education and outreach activities that are intended to promote tourism and recreation in the Lake Davis area, including, but not limited to, sponsoring recreation classes (e.g., fishing, fly fishing, youth archery, and outdoors women's clinics), installing interpretive panels along the reservoir and highways, providing educational workshops to schools, and developing recreational brochures. To the extent that these efforts generate additional recreation activity and spending, economics benefits are being realized in the local economy.

Water supplies from Lake Davis also represent another potential local economic issue that may affect local residents. Under existing conditions, the local economic impacts attributed to Lake Davis water supplies likely are not substantial. However, the discussion below provides a conceptual framework to better understand these economic relationships. There are four contexts in which Lake Davis water supplies may affect the local economy under existing conditions.

- First, if surface water levels of Lake Davis affect nearby groundwater levels to the extent that groundwater pumping costs would increase and/or replacement water supplies are needed, then economic impacts are incurred locally. (A description of the relationship between surface water levels at Lake Davis and groundwater supplies is presented in Section 4, Groundwater Resources.)
- Second, a concern has been expressed that the quality of water in Lake Davis and its tributaries may affect groundwater quality. If the quality of water in Lake Davis and its tributaries affects the drinking water supplies such that replacement supplies are needed, then the cost of these alternative sources represents a local economic impact. (A description of the relationship between surface water quality in Lake Davis and groundwater quality is presented in Section 4, Groundwater Resources.)

- Third, there may be opportunity costs associated with the City of Portola's and Grizzly Lake Resort Improvement District's (GLRID's) use of their community groundwater systems relative to using Lake Davis as a source of domestic water supply (as has been the case in the past). If the cost of groundwater is higher than the cost of treated surface water from Lake Davis, then this cost difference represents an economic impact that may be passed on to local water customers.
- Lastly, water releases from Grizzly Valley Dam provide water supplies to downstream water right holders.[7] To the extent that these water supplies support various land uses and economic activities, they also generate local economic benefits.

12.1.5.1 Recreation Economic Benefits at Lake Davis

The economic benefits of recreation at Lake Davis are both direct and indirect. First, there are the economic benefits attributed directly to recreation (as measured by economic output, income, and jobs). These are based on the recreation-related spending that occurs in the local economy. Typical expenditures include purchase of gas and other transportation expenses, lodging, food (both at retail outlets and restaurants), sporting goods (e.g., bait and tackle), and other retail purchases. This initial injection of spending into the local economy represents the direct economic benefit of recreation. In addition, this spending generates indirect economic benefits as the money ripples through the economy based on inter-industry linkages. It also induces additional spending by households as a result of direct and indirect income earned. These are referred to as induced impacts. Total economic impacts are the sum of these direct, indirect, and induced impacts. The ratio of total to direct economic impacts is commonly referred to as a "multiplier."

In addition, recreation provides economic value to individual recreationists. The economic (or consumer surplus) value of recreation represents the value that people place upon use of the resources, despite the fact that it is typically provided for free or a nominal cost. Because recreational services typically are not directly traded in an open market, the values associated with these services are considered "non-market" values, which require non-market valuation estimation techniques.

To estimate the regional economic impacts and economic values associated with existing recreation use at Lake Davis and the potential economic impacts of the Proposed Project and alternatives, the DFG funded a separate economic study that was conducted by CSUC (see Appendix I, Attachment 1). The purpose of the CSUC study is to examine the short- and long-term economic impacts of pike and pike eradication efforts. The study includes the following components: (1) an estimate of the economic and fiscal impacts of pike eradication efforts on the Plumas County economy using IMPLAN, a regional input-output economic model, and (2) an estimate of the economic value of fishing activity at Lake Davis to all anglers based on a travel-cost study. The relationships between recreation use and local economic and fiscal impacts and recreation-related economic values that were developed in the CSUC study serve as the foundation of the economic analysis included in this section.

[7] Downstream water rights include appropriated and riparian water rights. See Section 13, Public Services, for a discussion of these resources.

In terms of the regional economic analysis, it should be noted that while the majority of the direct economic impacts are likely to be felt in the City of Portola, the input-output analysis uses a Plumas County model. It is possible to separate the impacts for the City of Portola from those of the remainder of the county by running the IMPLAN model at the zip code level; however, previous experience of the Center for Economic Development at CSUC with IMPLAN is that the smaller the defined economic unit, the less reliable the estimates.

12.1.5.2 Regional Economic Impacts of Lake Davis Recreation

The direct economic impact of recreation activity at Lake Davis is based on non-resident visitor spending in the local economy. The focus is on non-resident visitor spending because it represents new money being drawn to the region, thus expanding the economy.[8] Based on survey data, the CSUC study estimates that the average expenditure per non-resident visitor day is $35.60, which is organized into the following components: restaurant meals ($8.09), lodging ($8.08), transportation ($8.86), fishing-related expenses ($2.73), groceries ($5.24), and other local retail ($2.60). The regional economic impacts of recreation-related expenditures in the Lake Davis area are summarized in Table 12.1-7. The results presented in the table are per 10,000 non-resident visitor days, and therefore should be adjusted based on estimates of current recreation use levels to determine the current contribution of Lake Davis recreation to the Plumas County economy.

Table 12.1-7. Baseline Regional Economic Impacts from Lake Davis Recreation (Per 10,000 Non-Resident Visitor Days)

Impact Type	Direct	Indirect	Induced	Total
Output	$356,000	$57,090	$62,018	$475,109
Income[1]	$208,139	$31,707	$38,576	$278,422
Employee Compensation	*$109,457*	*$14,742*	*$15,609*	*$139,807*
Proprietor Income	*$44,056*	*$3,528*	*$3,482*	*$51,066*
Other Property Income	*$21,243*	*$10,528*	*$14,815*	*$46,586*
Indirect Business Taxes	*$33,383*	*$2,910*	*$4,670*	*$40,963*
Employment	9.1	0.8	0.9	10.8

Source: *Center for Economic Development at California State University, Chico, 2006*

[1] Components of income include: employee compensation, proprietor income, other property income, and indirect business taxes.

Estimates of current recreation use at Lake Davis vary. In the CSUC study, estimates of non-resident visitation range between 13,291 and 22,260 visitor days in 2005, and a figure of 20,000 visitor days was used in the calculation of economic impacts. The recreation analysis in this EIR/EIS estimates that actual baseline recreation use levels at Lake Davis were substantially higher, at 92,400 visitor days annually, which included both residents and nonresidents. For more information, please refer to Section 11, Recreation Resources.

[8] For the purposes of the local economic analysis, it is assumed that if local recreationists do not spend money on recreation-related goods and services, they would spend it in other sectors of the local economy; this would offset the change in local economic activity from the lost recreational use.

Because economic impacts are tied to only non-resident visitation and spending, it was necessary to make an assumption about the proportion of local versus out-of-county visitors coming to Lake Davis. Based on available data and professional judgment, it is assumed that 50 percent of visitors come to Lake Davis from outside of Plumas County, or 46,200 non-resident visitors under existing conditions.[9] Based on this range (20,000 to about 46,200 annual non-resident visitor days), the total annual economic impacts of Lake Davis recreation on the Plumas County economy under existing conditions is estimated to be:

- $950,200 to $2,195,000 in total economic output (or gross business sales)
- $556,800 to $1,286,300 in total income, including $381,700 to $881,800 in total labor income
- 22 to 50 total full- and part-time jobs

In addition, Plumas County and the City of Portola earn tax revenue from recreation visitation to Lake Davis. According to the CSUC study, the Plumas County general fund receives approximately 25 percent of indirect business taxes paid in connection with local economic activity, with most of the remaining funds going to the state. Thus, based on this relationship, it is estimated that Plumas County realizes about $20,500 to $47,300 in annual tax revenues based on estimates of current visitation levels to Lake Davis.

12.1.5.3 Economic Value of Lake Davis Recreation

The CSUC study also estimates the non-market economic value of recreation at Lake Davis using an individual travel-cost model, which was developed based on on-site survey data. The theory, methodology, and application of the travel cost model are included in Appendix I (Attachment 1). Generally, this model measures the consumer surplus value realized by recreationists, i.e., the value realized by recreationists above the monetary cost for the recreation experience.

The results of the travel-cost analysis indicate that net willingness-to-pay (or consumer surplus value) per recreation visitor day is approximately $67.[10] According to the study, given that nearly 91 percent of visitors surveyed indicate that the primary purpose of visiting Lake Davis is fishing, the value of $67 per visitor day likely captures the value fisherman place on Lake Davis trout, and is consistent with the estimated value of other trout fisheries cited in the environmental and resource economics literature. It is estimated that the net annual economic value of Lake Davis recreation resources to visitors under existing

[9] This assumption was based on several data sources. First, DWR surveys at Big Grizzly Creek show that 70 percent of users were from Plumas County; however, Lake Davis offers additional facilities and amenities that would serve non-resident visitors, such as developed boat ramps. Second, USFS National Visitor Use Monitoring (NVUM) data from 2005 indicate that about one-third of survey respondents in the Lake Davis area were from "local" communities (i.e., Portola, Graeagle, Quincy); however these communities represent only a subset of Plumas County. Based on the approximate mid point of these data points, it is assumed that about half of Lake Davis visitors come from outside Plumas County.

[10] Consumer surplus value (or willingness-to-pay) is a distinct concept from average recreation expenditures described in Section 12.1.5.2. In the context of recreation, consumer surplus is a measure of the economic value that recreationists place on engaging in a particular activity, while recreation expenditures refer to purchases made for related goods and services while on a recreation trip. Recreation trip expenditures are used to measure impacts on a local economy.

conditions ranges between $1,340,000 (based on 20,000 non-resident visitor days as estimated by CSUC) and $6,190,800 (based on 92,400 total visitor days as estimated in this EIR/EIS).

12.1.6 Regulatory Environment

NEPA recognizes that projects can result in ecological, aesthetic, historic, cultural, economic, social, or health effects (NEPA regulations, 40 CFR §1508.8); therefore, social and economic values need to be considered in the NEPA process. NEPA regulations (40 CFR §1508.14) also state that "economic or social effects are not intended by themselves to require preparation of an environmental impact statement. When an environmental impact statement is prepared and economic and social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment."

Economic considerations are treated differently under CEQA. Section 15131 of the CEQA Guidelines states in pertinent parts that: "Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes." The Guidelines also state that: "Economic or social effects of a project may be used to determine the significance of physical changes caused by the project."

12.2 Environmental Impacts and Consequences

This section describes the environmental impacts/consequences of the Proposed Project and alternatives in the context of economic resources. It begins with an overview of the key economic resources potentially affected by the project. Subsequently, it describes the methodology and assumptions used in the impact analysis and presents the analysis of direct and indirect economic impacts, organized by project alternative. Cumulative economic impacts are addressed in Section 12.2.10. The section concludes with a summary of economic impacts in Section 12.2.11.

12.2.1 Evaluation Criteria and Environmental Issues

The assessment of economic impacts focuses on those resources that would be potentially affected by the Proposed Project and alternatives. All of the economic impacts considered here represent the indirect effects of direct changes in the physical environment. At the local level, regional economic impacts (as measured by changes in economic output, income, and employment) would result primarily from changes in non-resident recreation visitation and related spending in the Lake Davis area. Changes in recreation levels (both resident and nonresident) would also affect net economic values (or consumer surplus values) attributed to recreation at Lake Davis. In addition, implementation of a pike eradication project could generate regional economic benefits based on the local spending and employment associated with project implementation; however, these impacts are not quantified as part of this

analysis, but are referenced qualitatively in the discussion of impacts below. Other local impacts considered here include potential effects on fiscal (tax) revenues collected by local jurisdictions (i.e., Plumas County and the City of Portola), which are tied mainly to the regional economic effects described above, changes in property values, and economic impacts related to water supplies.

The analysis of project impacts also addresses potential statewide economic impacts. These impacts are attributed to the likelihood of northern pike escapement and establishment downstream from Lake Davis, including the Sacramento-San Joaquin Delta system. As such, they are directly pertinent to the analysis of the No Project/No Action alternative. A separate study of statewide economic impacts is used as the basis for the analysis presented here, and is included in Appendix I (Attachment 2). The main considerations in the statewide economic analysis are the potential adverse impacts on commercial and recreational fisheries downstream from Lake Davis through the Delta and beyond, including salmon harvests, and possible reductions in water exports in the CVP/SWP system from the Delta, which could have related impacts on agricultural production and municipal and industrial (M&I) uses throughout the state.

A prominent component of the impact analysis is the evaluation of regional economic effects at both the local (Plumas County) and statewide level. As described above, these impacts on economic output, income, and employment are broken down into direct, indirect, and induced impacts. For presentation purposes, only the total regional economic impacts are referenced in the text and tables below.

Under CEQA, economic effects shall not be treated as significant effects on the environment, and therefore, no environmental impact mitigation is required. Under NEPA, an analysis of social and economic effects is required; however, there is no standard set of criteria to evaluate economic impacts (see Section 12.1.6).

12.2.2 Evaluation Methods and Assumptions

The methods used to estimate the economic impacts of the Proposed Project and alternatives vary by resources. Regional economic effects, both at the county and statewide level, were estimated using input-output economic modeling techniques using IMPLAN software and data. Regional economic effects at the local level were estimated using a county-level model and presented accordingly; however, the majority of the direct economic impacts are likely to be incurred in the City of Portola area. The evaluation of net economic values associated with Lake Davis recreation is based on the use of a travel-cost model that was developed by CSUC using primary survey data. The suite of assumptions used in the local and statewide economic analysis is included as part of the technical study reports included in Appendix I. Other economic parameters, such as impacts on property values and water supply costs and benefits, are addressed qualitatively based on professional judgment and anecdotal information collected as part of the project.

The analysis of regional economic and fiscal impacts within Plumas County and net economic values attributed to Lake Davis recreation was conducted by CSUC and is presented in a separate technical report (see Appendix I, Attachment 1). Please refer to the appendix for assumptions and methodology used in conducting this study. The information

presented in the CSUC study is based on recreational use estimates that are lower than those developed for the purposes of this EIR/EIS because it focuses on angling and boating and also uses different data sources and assumptions. The CSUC study uses data from surveys administered primarily to anglers and campers at select Lake Davis public access sites in September and October 2005. The recreation analysis in this EIR/EIS is based primarily on USFS surveys of recreationists at all Lake Davis public access sites. Those surveys are taken over a 200 day period which reflects the typical total use season at the reservoir. Based on these differences, the analysis presented here uses the fundamental economic relationships established in the CSUC study and applies them in the context of the recreation analysis presented in Section 11 of the EIR/EIS. To do so, one key assumption was made - the recreational spending profile developed by CSUC for the purposes of the local economic study is representative of spending patterns across a wider range of recreational uses considered in the analysis of recreation resources presented in Section 11. A separate assumption is also made that projected changes in recreational activity would be incurred proportionally among resident and non-resident visitors.

As indicated above, the analysis of local economic impacts is tied directly to projected recreation levels at Lake Davis over time. Future recreation use levels were estimated as part of the recreation analysis in Section 11, Recreation Resources, of this EIR/EIS. These estimates take into account a number of factors, including the proposed PNF closure orders to be implemented by the USFS; therefore, the economic analysis presented below implicitly accounts for the Federal actions that are part of this project.

The timing of project impacts is also another important consideration that requires the analysis of both short- and long-term economic impacts. For the purposes of this analysis, economic impacts were calculated over a 20-year period, commencing in 2007 (the time the proposed project could be implemented if approved) through 2026. Within this timeframe, however, economic impacts are expected to vary substantially. More specifically, while many of the alternatives would provide long-term recreation and economic benefits attributed to pike eradication, adverse short-term economic impacts are expected during the treatment and drawdown/refill periods. Accordingly, the economic analysis presented here captures the full range of economic impacts over time. Short-term impacts are based on estimated economic activity over an initial five-year period (2007-2011), which corresponds roughly to the implementation period, including refill, for some of the alternatives. After this initial 5-year period (2012-2026), recreation use, and therefore economic activity, is expected to increase under the project alternatives. Overall economic impacts are evaluated over the entire 20-year period of analysis, and implicitly include short- and long-term impacts. Summaries of the short-term, long-term, and overall economic impacts of the project are presented in Tables 12.2-1, 12.2-2, and 12.2-3, respectively at the end of this section; however, the text focuses on short-term and overall economic impacts. It should also be noted that while economic impacts were calculated over time, the analysis of economic effects is based on average annual values to facilitate comparison to existing conditions, which are presented in annual terms. [11] All monetary values are presented in constant 2005 dollars.

[11] Average annual values were calculated by dividing total economic benefits by the number of years in the period of analysis, which is 20 years for the long term and 5 years for the short term.

In addition, the economic impacts attributed to recreation are presented in ranges to account for the uncertainty associated with estimated drawdown and refill times under the various project alternatives. The duration of these events affects the period during which the reservoir would be unavailable for recreation use. The hydrologic modeling of drawdown and refill times is presented in ranges; therefore, the related analyses of recreation visitation and economic impacts are also presented in this manner.

Project impacts are based on several types of analytical comparisons. For the No Project/No Action alternative, project impacts are based on a comparison of average annual economic benefits under the foreseeable future (without-project) conditions relative to existing economic conditions. For the Proposed Project/Proposed Action and other project alternatives, project impacts are compared to existing conditions (as described above) and then compared to reasonably foreseeable future No Project conditions (i.e., the No Project/No Action alternative). The comparison of project-related economic effects relative to existing conditions is used to determine the importance of impacts under CEQA. However, the comparison of project-related effects relative to future No Project conditions is more meaningful in that it explicitly shows the economic consequences of implementing a particular alternative compared to anticipated changes in the status quo over time. A summary of the quantitative results of the economic and fiscal analysis is presented in Tables 12.2-1, 12.2-2, and 12.2-3 in Section 12.2.11 following the alternative analyses.

12.2.3 No Project/No Action

Section 12.1 describes the local economy and existing economic conditions attributed to activities associated with Lake Davis. Existing economic conditions are different than the No Project/No Action condition analyzed in this section, which represents future economic conditions that are expected to occur in the absence of implementing a pike eradication project at Lake Davis. When compared to existing conditions, the No Project alternative would result in adverse economic impacts over the short and long terms.

12.2.3.1 Impacts on Local Economic Activity

Under the No Project/No Action alternative, direct effects on recreation resources and visitation levels would indirectly affect local economic activity in Plumas County (as measured by economic output, income, and jobs). Recreation activity under the No Project/No Action alternative is expected to decrease moderately in the short-term due to ongoing degradation in the recreational trout fishery at Lake Davis reflecting the continued presence of the northern pike; these short-term effects would likely be partially offset by regional population growth and various educational and outreach activities being implemented by the DFG.[12] Declines in the trout fishery are expected to continue for up to 10 years, at which point the fishery would no longer be viable for recreation uses. Over the long term, recreation activity is expected to ultimately slowly recover in conjunction with population growth. Refer to Section 11.2.3 under Recreation Resources for more information regarding recreation conditions under the No Project alternative.

[12] Refer to Section 12.1.5 for more information.

Over the entire 20-year period of analysis (2007-2026), the economic benefits to Plumas County attributed to the projected levels of recreation activity at Lake Davis and related spending, in absence of the project, include $1.84 million in average annual economic output, $1.08 million in average annual income, and an average of approximately 42 annual jobs. Compared to existing economic conditions attributed to recreation at Lake Davis, the No Project/No Action alternative would result in a range of economic losses due to an overall decline in recreation activity over time, particularly projected reductions in angling activity in response to declining catch rates. Specifically, the No Project/No Action alternative is expected to result in relative losses of approximately $0.36 million in economic output, $0.21 million in income, and about 8 jobs (expressed in average annual terms); this represents an approximate 16.2 percent decline in average annual economic activity compared to existing conditions. When evaluated in the context of the Plumas County economy, these adverse economic impacts account for less than one percent of countywide economic output, income and employment levels.[13]

In the short term, defined as the initial five-year period after project implementation (2007-2011), economic activity generated under the No Project/No Action alternative is also expected to be lower than existing conditions. If the project were not implemented, average annual economic losses include an estimated decrease of $0.16 million in economic output, a decline of $92,500 in income levels, and a loss of 4 jobs; this represents an approximate 7.2 percent decline in average annual economic activity compared to existing recreation-related economic benefits generated at Lake Davis. However, when evaluated in the context of countywide conditions, these average annual short-term impacts account for less than one percent of economic output, income and employment, respectively, in Plumas County.

In summary, under the No Project/No Action alternative, short- and long-term economic losses would be incurred within the economies of Plumas County and the City of Portola as a result of declining recreation levels over time. This is an adverse economic impact of the No Project/No Action alternative.

12.2.3.2 Impacts on Local Fiscal Resources

As indicated in the CSUC economic study, the estimated impacts on Plumas County fiscal revenues are approximated as 25 percent of indirect business tax revenues generated by local economic activity.[14] Based on this relationship, it is estimated that projected recreation activity at Lake Davis under the No Project/No Action alternative would generate about $39,700 in average annual tax revenues for Plumas County over the 20-year analysis period. This is roughly $7,700 (-16.2 percent) less than annual tax revenues generated under existing conditions. Fiscal impacts are expected to be slightly less in the short term during which average annual fiscal revenues are about 7.2 percent lower relative to existing conditions.

[13] It is likely that the direct economic impacts of the project (under all of the alternatives) would be concentrated in the City of Portola area; however, it is not possible to compare the results of the Plumas County economic model to city- or community-level economic conditions. Further, many baseline economic data are not available at the city level, and therefore, it is difficult to evaluate the magnitude of economic impacts at the city level.

[14] The estimate of fiscal impacts on Plumas County revenues referenced in the preliminary CSUC study is less precise than what will be included in their forthcoming final economic report; therefore, the fiscal effects presented here are also considered preliminary.

These estimated losses in fiscal revenues over both the short and long term account for less than one percent of the operating budgets of both Plumas County and the City of Portola.[15]

In summary, Plumas County and the City of Portola would incur a short- and long-term loss in fiscal revenues under the No Project/No Action alternative due to declines in local economic activity over time. This is an adverse economic impact of the No Project/No Action.

12.2.3.3 Impacts on Local Property Values

Under the No Project/No Action alternative, the pike eradication alternatives would not be implemented. Therefore, there would be no effect on reservoir levels relative to baseline conditions and no negative publicity attributed to the project would be generated, both of which could potentially affect the local housing market.

On the other hand, if the project were not implemented, there is the potential that the continued, increasing, presence of the pike in Lake Davis (and related decrease in the trout population) could generate negative publicity that could adversely affect local property values. The extent to which property values may be affected in this respect is difficult to estimate because recreation opportunities in the region are only one part of a larger bundle of goods that affect local property values. Further, it is too speculative to evaluate the potential reaction of the local real estate market to such conditions.

In summary, it is unlikely that local property values would be affected if a pike eradication alternative is not implemented, although the potential exists for adverse effects on the local real estate market in response to continued presence of the pike over time. It would be too speculative to make definitive conclusions regarding potential property value impacts under the No Project/No Action alternative.

12.2.3.4 Impacts on Economic Values of Lake Davis Recreation

Non-market economic values[16] realized by individual recreationists visiting Lake Davis were also estimated in the CSUC study. According to that study, the recreation value (or consumer surplus value) of a recreation visitor day at Lake Davis is estimated to be $67. Based on this figure, average annual net economic values attributed to projected levels of recreation use at Lake Davis anticipated under No Project/No Action alternative over the 20-year analysis period is estimated to be $5.19 million. The recreation economic values attributed to the No Project/No Action alternative are approximately $1.00 million (-16.2 percent) lower than existing conditions on an average annual basis over the long term, and about $0.45 million (-7.2 percent) lower in the short term.

In summary, total economic values attributed to Lake Davis recreation would decrease in conjunction with declining recreation use levels over time under the No Project/No Action alternative. This is an adverse economic impact of the No Project/No Action alternative.

[15] Not all of the fiscal impacts are expected to be incurred by the City of Portola; the proportion of total impacts to the City of Portola's operating budget is shown to gauge the relative magnitude of impacts.

[16] Also referred to as consumer surplus values.

12.2.3.5 Impacts on Water Supply Costs and Benefits

Under the No Project/No Action alternative, there would be no foreseeable change in groundwater pumping costs at nearby wells, no change in groundwater quality that would warrant the need for replacement water supplies, no change in the timing associated with the City of Portola being able to use Lake Davis as a domestic water supply source (assuming that the new treatment plant is operational and approved), and no change in the availability of downstream water supplies. As a result, there would be no change in related water supply costs and benefits under the No Project/No Action alternative relative to existing conditions. Therefore, no related adverse economic impacts would occur.

12.2.3.6 Impacts on Statewide Economic Activity

The escapement of northern pike and their establishment in the Sacramento-San Joaquin Delta system could result in substantial adverse economic impacts throughout the State of California. Because it is assumed for this analysis that pike eradication efforts under the various project alternatives would be successful, the pike escapement scenario only applies to the No Project/No Action alternative.[17] These potential impacts were analyzed in a separate economic study conducted for this project, which is included in Appendix I, Attachment 2.

The analysis of statewide economic impacts is based on hypothetical scenarios concerning the physical effects that pike escapement would have on commercial and recreation fisheries and Delta water exports. A hypothetical 10 percent reduction in commercial and recreation fishing through the Delta and 10 percent reduction in exports from the SWP/CVP systems south of the Delta to the Central Valley would generate substantial economic losses. Based on input-output modeling conducted for this project, it is estimated that the economic impact associated with reductions in commercial fishing would entail annual losses of $3.47 million in total economic output, $1.60 million in total labor income, and 59 average annual jobs.[18] Annual economic losses attributed to reductions in freshwater and marine recreation fishing are estimated to be $17.75 and $1.49 million in total economic output, $6.12 and $0.51 million in total labor income, and 175 and 14 average annual jobs, respectively. From a recreation standpoint, net economic values (or consumer surplus values) would also be adversely affected. Using a benefits-transfer approach, it is estimated that hypothesized reductions in recreation fishing would result in a loss of $41.5 million in net economic values. The largest source of economic impacts, however, would be associated with reduced agricultural production from reduction in available water supplies. Potential reductions in CVP/SWP water supplies are estimated to result in annual losses of $534.80 million in total economic output, $179.18 million in total labor income, and 5,445 average annual jobs. Reductions in Delta water exports would also adversely affect municipal and industrial (M&I) water customers; these effects have not been quantified.

[17] The estimated economic effects of pike escapement presented in Section 12.2.3.6 can also provide insight on the type and magnitude of impacts associated with: (1) ”failure to eradicate” scenarios under the action alternatives; (2) the scenario where pike have already escaped and will establish in the Delta regardless of the proposed project at Lake Davis; and (3) the establishment of pike via introduction by people from another system outside Lake Davis.

[18] The total economic effects listed here include the direct, indirect, and induced effects as estimated by the input-output (IMPLAN) model.

In summary, there is the potential for adverse economic effects throughout California if the pike were to escape Lake Davis and become established downstream. These effects would be driven by decreased populations of recreational and commercial fisheries and reductions in water exports from the Delta, which in turn could adversely affect recreational fishing, commercial fish production, and agricultural values. However, because it is too speculative to estimate specific changes on the physical environment from pike escapement, the analysis of statewide economic impacts is based on hypothetical scenarios of the potential physical effects of pike escapement. Nevertheless, the results of the statewide economic analysis suggest that pike escapement could result in substantial adverse economic impacts throughout California.

12.2.4 Proposed Project/Proposed Action – 15,000 Acre-Feet (Plus Treatment)

12.2.4.1 Impacts on Local Economic Activity

The direct impacts on recreation resources and visitation under the Proposed Project/Proposed Action would affect local economic activity in Plumas County. Recreation activity under the Proposed Project/Proposed Action is expected to decline initially due to unavailability of the reservoir during the drawdown and refill periods, and then increase over time mainly due to an increase in angling activity resulting from improved catch rates expected with implementation of the Fisheries Management Plan (DFG 2006, Appendix G).

Over the 20 year period of analysis, the economic benefits attributed to the projected levels of recreation activity and related spending in Plumas County under the Proposed Project/Proposed Action range between $2.23 to $2.26 million in average annual economic output, $1.31 to $1.33 million in average annual income, and an average of 51 to 52 annual jobs. Compared to existing conditions, this alternative would generate an increase in economic benefits over time, which is attributed to higher visitation levels once the pike are eradicated and fishing and other recreation conditions improve. Specifically, the Proposed Project/Proposed Action is expected to result in a relative increase of approximately $39,100 to $69,100 in economic output, $22,900 to $40,500 in income, and 1 to 2 jobs, on an average annual basis, over the next 20 years; this represents an approximate 1.8 to 3.2 percent increase in average annual economic activity relative to existing conditions. However, a more meaningful indicator of economic impacts is based on the comparison to future No Project conditions (i.e., No Project/No Action alternative). Based on this comparison, the Proposed Project/Proposed Action would generate greater local economic benefits associated with a relative increase in recreation levels over time, namely $0.39 to $0.42 million in increased economic output, $0.23 to $0.25 million in additional income, and an additional 9 to 10 jobs over the next 20 years (expressed in average annual terms).

In the short term, however, the Proposed Project/Proposed Action would result in adverse economic impacts in Plumas County when evaluated relative to both existing and future No Project conditions. Under this alternative, estimated average annual economic losses include a decrease in economic output of $0.46 to $0.58 million, a decrease in income of $0.27 to $0.34 million, and a loss of 11 to 13 jobs; this represents an approximate 21.2 to 26.6 percent decline in average annual economic activity compared to existing economic conditions

associated with current levels of recreation at Lake Davis. However, when evaluated in the context of countywide conditions, these impacts, expressed in average annual terms, account for less than one percent of economic output, income and employment, respectively, in Plumas County. Short-term adverse impacts on local economic conditions under the Proposed Project/Proposed Action are relatively lower when compared to future No Project conditions because recreation levels (and economic growth) are expected to decrease in the short term without the project based on a declining trout fishery.

Implementation of the project under the Proposed Project/Proposed Action would also generate short-term economic benefits attributed to project-related spending and employment in the local economy. These benefits, although not quantified, are attributed to scoping meetings, public workshops, and project-related employment needs (i.e., survey, preparation, and treatment crews), which induce local spending on items such as lodging, meals, and gas. Such expenditures would primarily be realized during the treatment period and could represent a substantial increase in revenues for the local area at a time when visitation at Lake Davis may be low thereby partially offsetting some of the adverse short-term economic impacts attributed to declines in recreation use levels. Potential impacts on DFG employment levels were not analyzed. In addition, some of the educational and outreach efforts currently being implemented in the region by the DFG may be expanded under the Proposed Project/Proposed Action (and other action alternatives), which may also help minimize adverse short-term economic impacts. This may include the following:

(1) The rapid restocking of the reservoir with catchable trout, as described in the Fisheries Management Plan, coupled with wide media advertisement of the stocking to provide angling opportunities.

(2) Publishing and widely distributing brochures, newsletters, and press releases.

(3) Maintaining a website with information on the pike eradication project, fisheries management at the reservoir, and water quality monitoring results.

(4) Publishing newsletters and positive-image press releases in an appropriate and timely manner during and after the treatment, to inform residents of recovery progress and to encourage visitors to the Portola, Lake Davis and surrounding area.

(5) Using a wide variety of media for notifying the public of the recovery of Lake Davis – including radio announcements in Reno and Sacramento.

(6) Maintaining a public office in the City of Portola with DFG staff, as well as publishing the phone numbers and email addresses of key project personnel to allow a response to questions.

(7) Developing a public outreach program that includes presentations to educational institutions, conservation, environmental, civic, government and other interested and non-governmental organizations, and providing information through the media.

(8) Working closely with other responsible state, local and federal agencies to provide the most accurate and timely information to a wide public.

Also, planting trout in suitable waters nearby Lake Davis beginning in the spring prior to the treatment would help to minimize adverse short-term economic impacts.

Impact E-1: When compared to existing and future No Project conditions, there would be an increase in long-term economic output, income, and jobs within Plumas County and the City of Portola area as a result of increasing recreation levels over time under the Proposed Action/Proposed Project; these are considered beneficial local economic impacts. In the short term, however, the Proposed Project is expected to result in adverse economic impacts based on estimated reductions in output, income, and employment compared to baseline conditions. Further, the economic benefits associated with project implementation (i.e., planning and treatment) may also help offset these short-term economic effects.

12.2.4.2 Impacts on Local Fiscal Resources

Based on the relationships between recreation spending and tax revenues established by the CSUC study, it is estimated that recreation activity at Lake Davis under the Proposed Project/Proposed Action would indirectly generate approximately $48,200 to $48,800 in average annual tax revenues within Plumas County over the 20-year analysis period. This is about $800 to $1,500 (1.8 to 3.2 percent) more than average annual tax revenues generated under existing conditions over the long term. Long-term fiscal benefits are more pronounced relative to future No Project conditions, where this alternative would result in an increase of $8,500 to $9,100 (or 21.4 to 23.1 percent) in average annual tax revenues.

While fiscal benefits may occur over the long term, there is the potential for local jurisdictions to incur adverse fiscal impacts in the short term. Specifically, the Proposed Project/Proposed Action is expected to result in a loss of $10,000–$12,600 and $6,600-$9,200 in average annual tax revenues, relative to existing and future No Project conditions, respectively, between 2007 and 2011. These fiscal losses account for less than one percent of the operating budgets of Plumas County and the City of Portola, respectively.

Impact E-2: Over the long term, local county and city governments would realize an increase in fiscal revenues under the Proposed Project/Proposed Action, relative to both existing and future No Project conditions, due to increases in local economic activity over time; this is considered a beneficial impact. In the short term, however, the Proposed Project/Proposed Action may result in adverse fiscal effects related to the temporary decline in recreation activity and related spending during the drawdown and refill periods.

12.2.4.3 Impacts on Local Property Values

Evaluating the effects of the Proposed Project on property values would involve isolating the impact of the Proposed Project from other factors that may also affect property values. These other factors include: national and regional trends in the real estate market; interest rates; motivations of sellers in the market place, such as employment transfer, death, divorce, or financial considerations; property-specific factors such as location, size and shape of the parcel, the age, quality and condition of improvements; competition from other residential areas; weather conditions; and the availability of vacant land for development.

With that said, the CSUC study provided a cursory analysis of potential transitory impacts on local property values that might be expected during pike eradication efforts. The main issue of concern is that local property may become less attractive to buyers from outside of Plumas County for two main reasons: (1) lower reservoir levels during the treatment process that would make the reservoir unavailable for use; and/or (2) adverse publicity associated with the real or perceived consequences of the treatment itself. Potential property value effects attributed to lower reservoir levels and closures should, at most, be the interest cost of delaying property sales during the period when the reservoir would be unavailable for use. These effects are not likely to be substantial relative to the estimated impacts on local economic output, income, and jobs under the Proposed Project/Proposed Action (or any of the other project alternatives). The effect on property values caused by changes in local income is already included in the estimates of local economic impacts, specifically impacts on income, which include the effect on property income. Thus, including a property value impact would entail some degree of double counting.

Additional insight into this issue can be gained by evaluating historical effects on property values associated with pike eradication efforts in 1997. However, based on this information, the effects of closing Lake Davis during the previous eradication effort cannot be separated from the other factors that affected property values in the mid to late 1990s. These factors include rising interest rates and other national and state economic factors that depressed real estate prices throughout California during this period. The recovery of real estate prices locally and regionally did not begin in earnest until interest rates declined after the year 2000.

Plumas County did experience a decrease in new homes permitted (one measure of property-related activity) in 1999. New home permits decreased from 123 in 1998 to 101 in 1999, or about 18 percent. By the year 2000, housing permits had increased to 188, with further increases to 191 and 260 in 2001 and 2002, respectively. In comparison, Lassen County experienced a 31 percent decrease in new homes permitted from the 1996 peak period through 1997 and 1998, with recovery to the 1996 levels delayed until 2002. Adjacent Yuba County saw a surge in building activity in 1999 (probably due in part to damage from the 1997 flood), a 62 percent decline in new housing permits issued in 2000, and rapid growth in building activity beginning in 2002. Sierra County experienced a 41 percent decrease in new housing permits issued in 1997 and 1998 relative to 1996 (peak) levels, with a return to these peak levels in 2000. In general, while the timing is not precisely the same, surrounding counties experienced larger downturns (on a percentage basis) in housing construction activity in the late 1990s than did Plumas County.

Impact E-3: It is not possible to isolate the impact that the proposed pike eradication project would have on local property values under the Proposed Project/Proposed Action. Further, to the extent that this impact is tangible, it is likely a short-term and temporary phenomenon that would occur only during project implementation and refill periods.

12.2.4.4 Impacts on Economic Values of Lake Davis Recreation

Based on the estimated economic values of Lake Davis recreation in the CSUC study and projected recreation use levels under the Proposed Project/Proposed Action, the economic values associated with projected levels of recreation under this alternative is estimated to

average $6.30 to $6.39 million annually over the next 20 years. The average annual economic values generated under the Proposed Project/Proposed Action are approximately $0.11 to $0.20 million (1.8 to 3.2 percent) higher than existing conditions, and about $1.11 to $1.20 million (21.4 to 23.1) percent higher than future No Project conditions; this represents a long-term economic benefit of the project.

In the short term, there would be a temporary adverse impact on recreation economic values in the region. Over the initial five year period, it is estimated that about $4.54 to $4.88 million in recreation-related economic values would be generated on an average annual basis; this is about $1.31 to $1.65 million (-21.2 to -26.6 percent) lower than existing conditions, and roughly $0.87 to $1.2 million (-15.1 to -20.9 percent) lower than the No Project alternative.

Impact E-4: Total economic values attributed to Lake Davis recreation would increase in conjunction with increasing recreation use levels over time, which is considered a beneficial economic impact of the Proposed Project/Proposed Action. Short-term impacts on recreation values, however, are expected to be adverse, but temporary.

12.2.4.5 Impacts on Water Supply Costs and Benefits

Implementation of proposed pike eradication efforts could affect water supply costs and benefits. Concern has been expressed that drawdown of Lake Davis may have the potential to reduce groundwater levels near the reservoir, thereby potentially increasing groundwater pumping costs incurred by nearby local residents and entities that are served by private and public wells. Impacts to groundwater levels under the Proposed Project are discussed in Section 4, Groundwater Resources. Impacts to groundwater levels are less than significant. Local residents and entities would not incur such costs because groundwater levels in private and public wells near Lake Davis would not be affected (see Section 4.2.4.3). Nevertheless, groundwater level monitoring programs would continue. If any impacts to groundwater levels are identified, effects to groundwater would be mitigated by providing alternative water supplies. Also, based on the analysis of groundwater resources (Section 4.2.4.1), the City of Portola's community groundwater wells would not be affected, and no related costs would be incurred locally.

There could be economic costs associated with potential delays in the City of Portola resuming the use of Lake Davis as a domestic water supply source. The economic costs attributed to such delays would be based on the difference between the costs of treated/delivered groundwater versus the cost of treated/delivered surface water from Lake Davis. If Lake Davis water would be less costly, and the implementation of the proposed pike eradication effort causes the City of Portola to continue to use groundwater (in lieu of utilizing Lake Davis water), then the economic impact would be the difference in the cost of using Lake Davis water treated to domestic standards versus the cost of water supplied from the community groundwater wells. Future availability of Lake Davis for domestic water supplies is dependent primarily on construction and approval of a new treatment plant and a surface water elevation at Lake Davis of 5,750 feet (16,276 acre feet), which is the minimum required for treatment plant operation. The current estimate is that the treatment plant is anticipated to be online in April 2008 at the earliest. If the treatment plant is completed and approved for operation and the Proposed Project delays the plant's ability to use water from

Lake Davis, the delay could represent an adverse economic impact of the project if it is more expensive to continue serving the community with existing groundwater supplies relative to surface water from Lake Davis; this cost differential is not known at this time.

There are also potential economic effects associated with downstream water uses. Under the Proposed Project/Proposed Action, reductions in downstream water supplies would occur only during the treatment and neutralization period when flows would be reduced to between approximately 0.15 to 5 cfs depending on neutralization option. During this period, which is expected to last up to 45 days, there would be less water available for downstream water right holders and related uses. A reduction in available water could impact existing land uses dependent on water from Lake Davis, which could have adverse economic effects if alternative supplies are not available. However, a mitigation measure is proposed where DFG would provide alternative supplies to downstream water users if needed (refer to Mitigation PS-5 in Section 13, Public Services). This would protect economically viable uses dependent on Lake Davis water supplies.

Impact E-5: The Proposed Project/Proposed Action has the potential to result in adverse impacts on water supply costs and benefits; however, based on a mitigation measure that calls for the provision of replacement downstream water supplies (Mitigation PS-5 in Section 13, Public Services), no related economic impacts would occur. Potential economic impacts attributed to the continued use of groundwater by the City of Portola (as opposed to surface water from Lake Davis) for domestic supplies would be temporary.

12.2.5 Alternative A – 15,000 Acre-Feet (Plus Treatment Including Powder)

Under Alternative A, impacts on local economic activity and fiscal resources, economic values attributed to Lake Davis recreation, and property values would be essentially the same as under the Proposed Project/Proposed Action. No notable differences in the indirect economic consequences of the project would occur due to the use of powdered (versus liquid) rotenone. Please refer to Section 12.2.4 for a complete description of pertinent economic impacts.

Impact E-6: Alternative A would have a beneficial impact on local economic conditions in the long term and an adverse economic impact in the short term. Please refer to Impact E-1.

Impact E-7: Alternative A would have a beneficial impact on fiscal resources of local governments in the long term and an adverse fiscal impact in the short term. Please refer to Impact E-2.

Impact E-8: Alternative A may have an adverse impact on local housing and property values. Please refer to Impact E-3.

Impact E-9: Alternative A would have a beneficial impact on economic values attributed to recreation in the long term and an adverse effect on recreation economic values in the short term. Please refer to Impact E-4.

Impact E-10: Alternative A would have an adverse impact on water supply costs and benefits. Please refer to Impact E-5.

12.2.6 Alternative B – 5,000 Acre-Feet (Plus Treatment)

12.2.6.1 Impacts on Local Economic Activity

Implementation of Alternative B would directly affect recreation resources and use levels, thereby indirectly affecting local economic activity in Plumas County. Under this alternative, effects on recreation use levels, and therefore economic activity, in the short term would be more severe relative to the Proposed Project/Proposed Action due to the longer duration of drawdown and refill activities. Short-term economic benefits attributed directly to project implementation would be similar to those generated under the Proposed Project/Proposed Action.

Over the next 20 years, the economic benefits associated with the projected levels of recreation activity and spending in Plumas County are estimated to range between $2.19 to $2.24 million in average annual economic output, $1.28 to $1.32 million in average annual income, and an average of 50 to 51 annual jobs. Compared to existing conditions, Alternative B could generate adverse economic impacts in dry years due to relatively lower visitation levels over time, particularly during the drawdown and refill periods. Specifically, it is estimated that Alternative B could result in average annual losses of up to $9,500 in economic output, $5,600 in income, and less than 1 job compared to existing conditions over the next 20 years; this represents an approximate -0.4 percent decrease in average annual economic activity relative to existing conditions. Under these worst-case conditions, average annual impacts account for less than 0.1 percent of economic output, income and employment, respectively, in Plumas County. Relative to future No Project conditions, however, Alternative B is expected to generate local economic benefits associated with relatively higher recreation levels over time. These benefits include $0.35 to $0.41 million in increased economic output, $0.20 to $0.24 million in additional income, and an additional 8 to 9 jobs, on an average annual basis, over the next 20 years.

In the short term, Alternative B would have an adverse economic impact in Plumas County when evaluated relative to both existing and future No Project conditions. Under this alternative, estimated short-term economic losses include a decrease in economic output of $0.54 to $0.78 million, a decrease in income of $0.32 to $0.46 million, and a loss of 12 to 18 jobs, on an average annual basis, over the initial five year period; this represents an approximate 24.5 to 35.4 percent decrease in average annual economic activity relative to existing economic conditions. However, compared to countywide conditions, these average annual impacts account for less than one percent of economic output, income and employment, respectively, in Plumas County. Adverse short-term economic impacts are similar, but slightly lower, compared to future No Project conditions. Economic benefits attributed directly to project implementation described in Section 12.2.4.1 would be similar to those generated under the Proposed Project/Proposed Action.

Impact E-11: Over the long term, Alternative B is expected to generate economic benefits relative to future No Project conditions. However, when compared to existing economic conditions, there is the potential for a decrease in long-term economic output, income, and jobs within Plumas County and the City of Portola area in dry years; this represents an adverse economic impact of this alternative. Similarly, in the short term, Alternative B is expected to result in adverse economic impacts based on reductions in

output, income, and employment relative to both existing and future No Project conditions. The economic benefits associated with project implementation may help offset adverse short-term economic impacts.

12.2.6.2 Impacts on Local Fiscal Resources

Based on projected recreation levels at Lake Davis over time, Alternative B is expected to generate approximately $47,100 to $48,400 in average annual tax revenues within Plumas County over the 20-year analysis period. Under the worst-case scenario (i.e., dry water years), this could result in a decrease of up to $200 (-0.4 percent) in average annual tax revenues relative to existing conditions, which accounts for less than one percent of the operating budgets of Plumas County and the City of Portola, respectively; this is a potential adverse fiscal impact of Alternative B. Relative to future No Project conditions, however, there would be an increase in average annual tax revenues of approximately $7,500 to $8,700 (18.8 to 22.0 percent), which is considered a fiscal benefit of this alternative.

In the short term, local jurisdictions are expected to incur temporary adverse effects on fiscal revenues under Alternative B. Specifically, it is estimated that this alternative would result in a reduction of $11,600 to $16,700 in tax revenues, on an average annual basis, compared to existing conditions, between 2007 and 2011. Short-term fiscal impacts are slightly lower when compared to the No Project alternative. These fiscal impacts account for less than one percent of the operating budgets of Plumas County and the City of Portola, respectively.

Impact E-12: Local county and city governments would realize an increase in fiscal revenues under Alternative B over the long term, relative to future No Project conditions, due to increases in local economic activity over time; this is considered a beneficial impact on local fiscal resources. Compared to existing conditions, however, there is the potential that this alternative could result in adverse fiscal impacts over the long and short term based on the temporary decline in recreation levels during the drawdown and refill periods.

12.2.6.3 Impacts on Local Property Values

Under Alternative B, potential impacts on local property values would generally be the same as those described under the Proposed Project/Proposed Action; refer to Section 12.2.4 for more information. However, because the reservoir would be drawn down to lower levels (5,000 acre-feet as opposed to 15,000 acre-feet) and would take longer to refill, any potential, short-term, adverse impacts on property values related to reductions in reservoir availability and aesthetics may be prolonged.

Impact E-13: It is not possible to isolate the impact that the pike eradication project would have on local property values. Further, to the extent that this impact is tangible, it is likely a short-term phenomenon that would occur only during the project implementation period.

12.2.6.4 Impacts on Economic Values of Lake Davis Recreation

Over the 20 year period of analysis, recreation activity under Alternative B is estimated to generate an average of approximately $6.16 to $6.33 million annually in recreation-related economic values. Under the worst-case scenario (i.e., dry water years), this is approximately $26,700 (-0.4 percent) lower than existing conditions on an average annual basis, and represents an adverse economic impact of this alternative over the long term. However, relative to future No Project conditions, recreation-related economic values would increase over time by an average of about $0.98 to $1.14 million (18.8 to 22.0 percent) annually; this is a long-term economic benefit of Alternative B.

In the short term, there would be a temporary adverse impact on recreation economic values in the region. Between 2007 and 2011, it is estimated that recreation activity at Lake Davis would generate roughly $4.0 to $4.67 million in economic values, which is about $1.52 to $2.19 million (-24.5 to -35.4 percent) lower than existing conditions, and roughly $1.1 to $1.7 million (-18.7 to -30.4 percent) lower compared to the No Project alternative.

Impact E-14: Relative to future No Project conditions, economic values attributed to Lake Davis recreation would increase in conjunction with projected increases in recreation use levels in the long term; this is considered a beneficial economic impact of Alternative B. However, relative to existing conditions in the long- and short term, adverse impacts on recreation values are expected, but would be temporary.

12.2.6.5 Impacts on Water Supply Costs

Under Alternative B, impacts on water supply costs and benefits would be similar to those described under the Proposed Project/Proposed Project (see Section 12.2.4).

Impact E-15: Alternative B has the potential to result in adverse impacts on water supply costs and benefits to downstream surface water users; however, based on a mitigation measure that calls for the provision of replacement water supplies (see Mitigation PS-5 in Section 13, Public Services), no related economic impacts would occur. Potential economic impacts attributed to the continued use of groundwater by the City of Portola (as opposed to surface water from Lake Davis) for domestic supplies would be temporary.

12.2.7 Alternative C – 35,000 Acre-Feet (Plus Treatment)

12.2.7.1 Impacts on Local Economic Activity

The direct impacts on recreation resources expected under Alternative C (as described in Section 11, Recreation Resources), including changes in short- and long-term recreation activity, would indirectly affect local economic activity in Plumas County due to changes in recreation-related spending levels. Long- and short-term economic impacts attributed to projected recreation activity are described below. Short-term economic benefits attributed directly to project implementation would be similar to those generated under the Proposed Project/Proposed Action.

Over the next 20 years, the indirect economic benefits attributed to projected levels of recreation activity and associated spending in Plumas County under Alternative C range between $2.25 to $2.26 million in average annual economic output, $1.32 to $1.33 million in average annual income, and an average of 51 to 52 annual jobs. Compared to existing conditions, the Alternative C would result in increased economic benefits over the long term, which is attributed to higher visitation levels once the pike are eradicated and fishing conditions for trout improve. Specifically, Alternative C is expected to result in a relative increase of approximately $54,600 to $69,500 in economic output, $32,000 to $40,700 in income, and 1 to 2 jobs over the next 20 years (expressed in average annual terms); this represents an approximate 2.5 to 3.2 percent increase in average annual economic activity relative to existing conditions. Based on a comparison to future No Project conditions, Alternative C would generate greater local economic benefits associated with a relative increase in recreation levels over time, namely $0.41 to $0.42 million in increased economic output, $0.24 to $0.25 million in additional income, and an additional 9 to 10 jobs over the next 20 years (expressed in average annual terms).

In the short term, however, Alternative C would result in adverse economic impacts in Plumas County when evaluated relative to both existing and future No Project conditions. Under this alternative, estimated average annual economic losses include a decrease in economic output of $0.46 to $0.52 million, a decrease in income of $0.27 to $0.31 million, and a loss of 11 to 12 jobs; this represents an approximate 21.2 to 23.9 percent decline in average annual economic activity compared to existing economic conditions. However, when evaluated in the context of countywide conditions, average annual impacts account for less than one percent of economic output, income and employment, respectively, in Plumas County. The adverse impacts on local economic conditions under Alternative C are slightly lower when compared to future No Project conditions. Economic benefits attributed directly to project implementation described in Section 12.2.4.1 would be similar to those generated under the Proposed Project/Proposed Action.

Impact E-16: When compared to existing and future No Project conditions, Alternative C is expected to generate an increase in long-term economic output, income, and jobs within Plumas County and the City of Portola area as a result of increasing recreation levels over time; these are considered beneficial local economic impacts. In the short term, however, the project is expected to result in adverse economic impacts based on estimated reductions in output, income, and employment compared to baseline conditions. Further, the economic benefits associated with project implementation may help offset these adverse short-term economic impacts.

12.2.7.2 Impacts on Local Fiscal Resources

Based on projected levels of recreation activity at Lake Davis under Alternative C, this alternative would indirectly generate approximately $48,500 to $48,800 in average annual tax revenues within Plumas County over the 20-year analysis period. This is about $1,200 to $1,500 (2.5 to 3.2 percent) more than average annual tax revenues generated under existing conditions over the 20-year period of analysis. Long-term fiscal benefits are more pronounced relative to future No Project conditions, where this alternative would result in an increase of $8,800 to $9,200 (or 22.3 to 23.1 percent) in average annual tax revenues.

While fiscal benefits may occur over the long-term, there is the potential for local jurisdictions to incur adverse fiscal impacts in the short term. Specifically, Alternative C is expected to result in a loss of $10,000 to $11,300 in average annual tax revenues, relative to existing conditions, between 2007 and 2011. These fiscal losses are slightly less when compared to the No Project alternative, and account for less than one percent of the operating budgets of Plumas County and the City of Portola, respectively.

Impact E-17: Over the long term, local county and city governments would realize an increase in fiscal revenues under Alternative C, relative to both existing and future No Project conditions, due to increases in local economic activity over time; this is considered a beneficial impact. In the short term, however, Alternative C may result in adverse fiscal effects related to the temporary decline in recreation activity and related spending during the drawdown and refill periods.

12.2.7.3 Impacts on Local Property Values

Potential impacts on local property values under Alternative C values would generally be the same as those described under the Proposed Project/Proposed Action; refer to Section 12.2.4 for more information. However, because the reservoir would only be drawn down to 35,000 acre-feet (as opposed to 15,000 acre-feet) and would take a shorter time to refill, any potential, short-term, adverse effects on property values related to reductions in reservoir availability and aesthetics may be reduced in duration.

Impact E-18: It is not possible to isolate the impact that the pike eradication project would have on local property values. Further, to the extent that this impact is tangible, it is likely a short-term phenomenon that would occur only during the project implementation period.

12.2.7.4 Impacts on Economic Values of Lake Davis Recreation

Based on the estimated economic values of Lake Davis recreation and projected recreation use levels under Alternative C, the economic values attributed to projected levels of recreation under this alternative is estimated to average $6.34 to $6.39 million annually over the next 20 years. In average annual terms, the economic values generated under Alternative C are approximately $0.15 to $0.20 million (2.5 to 3.2 percent) higher than existing conditions, and about $1.16 to $1.20 million (22.3 to 23.1 percent) higher than future No Project conditions; this represents a long-term economic benefit of the project.

In the short term, there would be a temporary adverse effect on recreation economic values in the region. Over the initial five year period, it is estimated that about $4.71 to $4.88 million in recreation-related economic value would be generated on an average annual basis; this is about $1.31 to $1.48 million (-21.2 to -23.9 percent) lower than existing conditions. Estimated short-term declines in recreation values are slightly less when compared to the No Project alternative.

Impact E-19: Total economic values attributed to Lake Davis recreation would increase in conjunction with increasing recreation use levels in the long term; this is considered a beneficial economic impact of Alternative C. Short-term impacts on recreation values, however, are expected to be adverse, but would be temporary.

12.2.7.5 Impacts on Water Supply Costs

Under Alternative C, impacts on water supply costs and benefits would be similar to those described under the Proposed Project/Proposed Project (see Section 12.2.4). However, the intake for the proposed Plumas County Water Treatment Plant is below the surface elevation of the reservoir during treatment under this alternative. In other words, no refill of the reservoir would be required to reach the inlet pipe level under this alternative as would be the case under the Proposed Project. Only the time required to neutralize the water and to have the water certified by the California Department of Health Services (DHS) would be required before the reservoir water could be provided to an operational and approved treatment plant.

Impact E-20: Alternative C has the potential to result in adverse impacts on water supply costs and benefits for downstream water users; however, based on a mitigation measures that calls for the provision of replacement water supplies (see Mitigation PS-5 in Section 13, Public Services), no related economic impacts would occur. Potential impacts attributed to the continued use of groundwater by the City of Portola (as opposed to surface water from Lake Davis) for domestic supplies would be temporary.

12.2.8 Alternative D – 48,000 Acre-Feet (Plus Treatment)

12.2.8.1 Impacts on Local Economic Activity

Under Alternative D, the direct effects on recreation resources (as described in Section 11, Recreation Resources) are expected to indirectly affect local economic activity in Plumas County; these economic effects are described below. Short-term economic benefits attributed directly to project implementation would be similar to those generated under the Proposed Project/Proposed Action.

Over the next 20 years, the indirect economic benefits attributed to projected levels of recreation activity and associated spending in Plumas County under Alternative D is estimated to average approximately $2.28 million in annual economic output, $1.33 million in annual income, and 52 annual jobs. Compared to existing conditions, Alternative D would result in increased economic benefits over the long term, which is attributed to higher visitation levels once the pike are eradicated and fishing conditions improve. Specifically, Alternative D is expected to generate a relative increase of approximately $81,000 in average annual economic output, $47,500 in average annual income, and about 2 average annual jobs over the next 20 years; this represents an approximate 3.7 percent increase in average annual economic activity relative to existing conditions. In addition, based on the comparison of this alternative to future No Project conditions (i.e., No Project/No Action alternative), Alternative D would generate even greater local economic benefits associated with a relative increase in recreation levels over the long term; these benefits include $0.44 million in increased economic output, $0.26 million in additional income, and an additional 10 jobs over the next 20 years (expressed in average annual terms).

In the short term, however, Alternative D would result in adverse economic impacts in Plumas County when evaluated relative to both existing and future No Project conditions. Under this alternative, estimated average annual economic losses include a decrease in economic output of $0.43 million, a decrease in income of $0.25 million, and a loss of 10

jobs; this represents an approximate 19.7 percent decline in average annual economic activity compared to existing economic conditions. When evaluated in the context of countywide conditions, average annual impacts account for less than one percent of economic output, income, and employment, respectively, in Plumas County. The short-term adverse impacts on local economic conditions under Alternative D are slightly lower when compared to future No Project conditions. Economic benefits attributed directly to project implementation described in Section 12.2.4.1 would be similar to those generated under the Proposed Project/Proposed Action.

Impact E-21: When compared to existing and future No Project conditions, it is estimated that there would be an increase in long-term economic output, income, and jobs within Plumas County and the City of Portola area as a result of increasing recreation levels over time under Alternative D; these are considered beneficial local economic impacts. In the short term, however, the project is expected to result in adverse economic impacts based on estimated reductions in output, income, and employment compared to baseline conditions. Further, the economic benefits associated with project implementation may help offset these adverse short-term economic impacts.

12.2.8.2 Impacts on Local Fiscal Resources

It is estimated that projected recreation activity at Lake Davis under Alternative D would indirectly generate approximately $49,100 in average annual tax revenues within Plumas County over the 20-year analysis period. This is about $1,700 (3.7 percent) more than average annual tax revenues generated under existing conditions over the long term. Long-term fiscal benefits are more pronounced relative to future No Project conditions, where this alternative would result in an increase of $9,400 (23.7 percent) in tax revenues.

While fiscal benefits may occur over the long term, there is the potential for local jurisdictions to incur adverse fiscal impacts in the short term. Specifically, Alternative D is expected to result in a loss of $9,300 in average annual tax revenues, relative to existing conditions, between 2007 and 2011. Compared to the No Project alternative, short-term fiscal impacts are relatively lower. These fiscal losses account for less than one percent of the operating budgets of Plumas County and the City of Portola, respectively.

Impact E-22: Over the long term, local county and city governments would realize an increase in fiscal revenues under Alternative D, relative to both existing and future No Project conditions, due to increases in local economic activity over time; this is considered a beneficial impact. In the short term, however, Alternative D may result in adverse fiscal impacts related to the temporary decline in recreation activity and related spending during the drawdown and refill periods.

12.2.8.3 Impacts on Local Property Values

Under Alternative D, potential impacts on local property values would generally be the same as those described under the Proposed Project/Proposed Action; refer to Section 12.2.4 for more information. However, the reservoir would not be drawn down, but would increase to 48,000 acre-feet from the 45,000 acre foot level (as opposed to being lowered to 15,000 acre-

feet under the Proposed Project), There would be no potential, short-term, adverse impacts on property values related to reductions in reservoir availability and aesthetics because the reservoir is fully operational at that level.

Impact E-23: It is not possible to isolate the impact that the pike eradication project would have on local property values. Further, to the extent that this impact is tangible, it is likely a short-term phenomenon that would occur only during the project implementation period.

12.2.8.4 Impacts on Economic Values of Lake Davis Recreation

Based on the estimated economic values of Lake Davis recreation and projected recreation use levels under Alternative D, recreation-related economic value under this alternative is estimated to average $6.42 million annually over the next 20 years. The average annual economic values generated under Alternative D are approximately $0.23 million (3.7 percent) higher than existing conditions, and about $1.23 million (23.7 percent) higher than future No Project conditions; this represents a long-term economic benefit of the project.

In the short term, there would be a temporary adverse effect on recreation economic values in the region. Over the initial five year period, it is estimated that an average of about $4.97 million in recreation-related economic value would be generated annually; this is about $1.22 million (-19.7 percent) lower than existing conditions. Impacts on recreation-related economic values are smaller in the short term when compared to the No Project alternative.

Impact E-24: Total economic values attributed to Lake Davis recreation would increase in conjunction with increasing recreation use levels in the long term, which is considered a beneficial economic impact of Alternative D. Short-term impacts on recreation values, however, are expected to be adverse, but would be temporary.

12.2.8.5 Impacts on Water Supply Costs

Under Alternative D, impacts on water supply costs and benefits would be similar to those described under the Proposed Project/Proposed Project (see Section 12.2.4), except that there would be no potential impacts on groundwater costs because the reservoir would not be lowered under this alternative. Also the potential impacts on use of Lake Davis water for the water treatment plant would be similar to those discussed in Alternative C.

Impact E-25: Alternative D has the potential to result in adverse impacts on water supply costs and benefits for downstream surface water users; however, based on a mitigation measure that calls for the provision of replacement water supplies (see Mitigation PS-5 in Section 13, Public Services), no related economic impacts would occur. Potential impacts attributed to the continued use of groundwater by the City of Portola (as opposed to surface water from Lake Davis) for domestic supplies would be temporary.

12.2.9 Alternative E – Dewater Reservoir and Tributaries (No Chemical Treatment)

12.2.9.1 Impacts on Local Economic Activity

The projected recreation visitation and spending levels over time under Alternative E are estimated to be the lowest of all the project alternatives. Based on these figures, over the next 20 years, the indirect economic benefits attributed to the projected levels of recreation activity and associated spending in Plumas County are estimated to range between $2.17 to $2.25 million in average annual economic output, $1.27 to $1.32 million in average annual income, and an 49 to 51 average annual jobs. Compared to existing conditions, Alternative E could generate adverse, economic impacts during dry water years due to relatively lower visitation levels over time, particularly during the drawdown and refill periods. Specifically, it is estimated that Alternative E could result in up to $23,100 in decreased economic output, $13,500 in decreased income, and a loss of one job, on an average annual basis, compared to existing conditions over the next 20 years; this represents an approximate -1.1 percent decrease in average annual economic activity relative to existing conditions. Under these worst-case conditions, these average annual impacts are negligible, accounting for less than 0.1 percent of economic output, income, and employment, respectively, in Plumas County. However, relative to future No Project conditions, Alternative E would generate local economic benefits associated with relatively higher recreation levels over the long term. These benefits include $0.33 to $0.41 million in increased economic output, $0.19 to $0.24 million in additional income, and an additional 8 to 9 jobs, on an average annual basis, over the next 20 years.

In the short term, Alternative E would generate adverse economic impacts in Plumas County when evaluated relative to both existing and future No Project conditions. Under this alternative, estimated short-term economic losses include a decrease in economic output of $0.54 to $0.82 million, a decrease in income of $0.31 to $0.48 million, and a loss of 12 to 19 jobs, on an average annual basis, over the initial five year period; this represents an approximate 24.5 to 37.4 percent decrease in average annual economic activity relative to existing economic conditions. However, compared to countywide conditions, these average annual impacts account for less than one percent of economic output, income and employment, respectively, in Plumas County. Adverse short-term economic impacts are similar, but slightly lower, compared to future No Project conditions.

Economic benefits attributed directly to project implementation would be similar to those generated under the Proposed Project/Proposed Action.

Impact E-26: Over the long term, Alternative E is expected to generate economic benefits relative to future No Project conditions. However, when compared to existing conditions, it is estimated that there could be a decrease in long-term economic output, income, and jobs within Plumas County and the City of Portola area in dry years as a result of decreasing recreation levels over time; this represents an adverse economic impact of this alternative. Similarly, in the short term, this alternative is expected to result in adverse economic impacts based on reductions in output, income, and employment relative to both existing and future No Project conditions. Further, the

economic benefits associated with project implementation may help offset these adverse short-term economic impacts.

12.2.9.2 Impacts on Local Fiscal Resources

Based on anticipated recreation activity at Lake Davis, it is estimated that approximately $46,800 to $48,500 in average annual tax revenues would be generated in Plumas County over the 20-year analysis period under Alternative E. Under the worst-case scenario (i.e., dry water years), this represents a decrease of up to $500 (-1.1 percent) in average annual tax revenues compared to existing conditions, which accounts for less than 0.1 percent of the operating budgets of Plumas County and the City of Portola, respectively; this is a potential adverse fiscal impact of Alternative E. Relative to future No Project conditions, however, there would be an increase in average annual tax revenues of approximately $7,200 to $8,800 (18.1 to 22.3 percent), which is considered a fiscal benefit of this alternative.

In the short term, local jurisdictions are expected to incur temporary adverse effects on fiscal revenues under Alternative E. Specifically, it is estimated that this alternative would result in a reduction of $11,600 to $17,700 (-24.5 to -37.4 percent) in tax revenues, on an average annual basis, compared to existing conditions, between 2007 and 2011. This fiscal impact accounts for less than one percent of the operating budgets of Plumas County and the City of Portola, respectively. Adverse short-term fiscal impacts under this alternative are similar, but slightly lower, when compared to future No Project conditions.

Impact E-27: Local county and city governments would realize an increase in fiscal revenues under Alternative E over the long term, relative to future No Project conditions, due to increases in local economic activity over time; this is considered a beneficial impact. Compared to existing conditions, however, there is the potential that this alternative could result in adverse fiscal impacts over the long- and short term, based on the temporary decline in recreation levels during the drawdown and refill periods.

12.2.9.3 Impacts on Local Property Values

Alternative E would generally result in the same potential impacts on local property values as those described under the Proposed Project/Proposed Action; refer to Section 12.2.4 for more information. However, because the reservoir would be completely dewatered (as opposed to a drawdown to 15,000 acre-feet) and would take longer to refill, any potential, short-term, adverse effects on property values related to reductions in reservoir availability and aesthetics may be prolonged.

Impact E-28: It is not possible to isolate the impact that the proposed pike eradication project would have on local property values. Further, to the extent that this impact is tangible, it is likely a short-term phenomenon that would occur only during the project implementation period.

12.2.9.4 Impacts on Economic Values of Lake Davis Recreation

Over the long term, recreation activity under Alternative E is estimated to generate an average of about $6.13 to $6.35 million in recreation-related economic values annually over the 20-year analysis period. Under the worst-case scenario (i.e., dry water years), this is approximately $65,100 (-1.1 percent) lower than existing conditions on an average annual basis; this represents an adverse economic impact of this alternative over the long term. However, relative to future No Project conditions, recreation-related economic values would increase over time by an average of about $0.94 to $1.16 million (18.1 to 22.3 percent) annually; this is a long-term economic benefit of Alternative E.

In the short term, there would be a temporary adverse effect on recreation economic values in the region. Between 2007 and 2011, it is estimated that recreation activity at Lake Davis would generate roughly $3.87 to $4.68 million, on average, in economic values annually, which is about $1.52 to $2.32 million (-24.5 to -37.4 percent) lower than existing conditions. Short-term impacts on recreation-related economic values are lower when compared to the No Project alternative.

Impact E-29: Relative to future No Project conditions, economic values attributed to Lake Davis recreation would increase in conjunction with increasing recreation use levels in the long term, which is considered a beneficial economic impact of Alternative E. However, relative to existing conditions in the long- and short term, adverse impacts on recreation-related economic values are expected, but would be temporary.

12.2.9.5 Impacts on Water Supply Costs

Under Alternative E, impacts on water supply costs and benefits would be similar to those described under the Proposed Project/Proposed Project (refer to Section 12.2.4 for more information).

Impact E-30: Alternative E has the potential to adversely affect groundwater and surface water resources, which could in turn result in adverse impacts on water supply costs and benefits; however, based on mitigation measures that call for the provision of replacement private groundwater and downstream supplies under these scenarios (see Mitigation G-11 in Section 4.2.9.3, Groundwater Resources, and Mitigation PS-5 in Section 13, Public Services, respectively), no related economic impacts would occur. Potential impacts attributed to the continued use of groundwater by the City of Portola (as opposed to surface water from Lake Davis) for domestic supplies would be temporary.

12.2.10 Cumulative Impacts

The analysis of cumulative economic impacts is based on the contribution of project effects, in conjunction with effects of past, present and reasonably foreseeable actions, on the economic parameters considered in this EIR/EIS. These parameters are: local economic activity (as measured by economic output, income, and jobs), fiscal resources, local property values, net economic values associated with recreation, and water supply costs and benefits. The cumulative analysis focuses only on the proposed project and alternatives.

12.2.10.1 Definition of Analysis Area

The geographic area used in the analysis of cumulative economic effects is Plumas County, with a focus on projects and activities occurring in the City of Portola area. Plumas County was selected as the cumulative analysis area because it also represents the study area for the local economic analysis, including the input-output modeling conducted for the project. To the extent that the cumulative projects considered here occur near Lake Davis, there would be greater cumulative economic effects in the City of Portola area.

12.2.10.2 List of Projects Considered in the Cumulative Effects Analysis

The analysis of cumulative economic effects considers all projects and activities identified in the cumulative project list developed for this project. This is necessary because all projects require some level of local expenditures and labor requirements, and therefore, generate some level of economic impact. These projects are:

- DWR Containment project MND/IS
- City of Portola well-drilling
- City of Portola Treatment Plant
- DBW Ramp Extensions
- Whitetop weed spraying by Forest Service
- Paiute Cutthroat Trout Recovery Project
- Humbug DFPZ
- Deer Roadside Hazard Salvage
- Smitty Roadside Hazard Salvage
- Grazing Allotments
- Knuston-Vanderberg Cultural Projects
- Public Fuelwood Permits
- Little Summit Lake Post and Pole Permits
- Recreation Facilities Maintenance and Improvements
- Public Fuelwood Permits
- Pike Eradication by DFG
- Grizzly Ranch Development Project
- Watershed Restoration Projects
- Westside Lake Davis Watershed restoration project
- Long Valley KV
- Hazard Tree Removal

- DFPZ maintenance
- FS Road 24N10 Chip Seal Project
- Cutoff project
- Mt. Ingalls project
- Woodbridge development

However, it was not possible to obtain data on all of the cumulative projects considered here, therefore, the analysis of cumulative economic effects is qualitative in nature.

12.2.10.3 Cumulative Effects for the Proposed Project

12.2.10.3.1 Cumulative Effects on Economic and Fiscal Conditions

Two of the economic parameters considered here, local economic activity and fiscal resources, are directly tied to level of recreation spending that would be generated as a result of long-term improvements to the recreational fishery at Lake Davis assuming that pike are successfully eradicated. Improvements to the recreation resources at Lake Davis would induce more local residents and visitors to recreate at the reservoir and spend money locally, thereby generating benefits to the local economy and local government. These benefits include an increase in long-term economic output, income, jobs, and related tax revenues. These economic and fiscal benefits would accrue under all of the project alternatives to varying degrees.

From a cumulative standpoint, these project-related benefits would be realized in conjunction with the economic and fiscal benefits generated by the projects being considered in the cumulative analysis. Generally all of the cumulative projects would have or would generate some level of economic and fiscal benefit if they require some level of spending (funding) and workforce to implement. The extent that these cumulative projects generate direct economic benefits is dependent on the level of expenditures made locally for goods and services and the local workforce required to implement these projects. Financial information is not available for each of these cumulative projects to quantify the cumulative economic benefits that are generated to the region. However, it is reasonable to assume that projects clearly requiring larger expenditures on capital goods and equipment, such as the Plumas County Water Treatment Plant, Grizzly Ranch residential and golf course development, and Woodbridge at Portola residential development would generate substantially higher levels of economic benefits than other projects. Some projects may also generate additional economic benefits indirectly by inducing economic activity, such as the California Department of Boating and Waterways (DBW) ramp extensions and recreational facility improvements at Lake Davis. In these cases, economic benefits can be attributed to project construction, but also to any increases in recreation visitation and related visitor spending that may be induced.

One cumulative project, the prior pike eradication attempt in 1997, did have an adverse economic impact on the local economy. This was due to the decline in recreation visitation to the Lake Davis area. These declines were a result of recognition of pike in Lake Davis, the subsequent short-term closure of the reservoir during the 1997 pike eradication efforts, and

continued presence of the pike that has adversely affected fishing quality. Assuming the proposed eradication is successful, the anticipated long-term economic benefits of the Proposed Project and alternatives would help offset these adverse historical economic impacts.

In sum, the Proposed Project/Proposed Action and other project alternatives would generate a range of economic and fiscal benefits over time and adverse economic/fiscal impacts in the short term. Most of the other cumulative projects considered here would generate some level of economic benefits during the period in which they are implemented. Therefore, the adverse short-term impacts of the Proposed Project would counter the economic benefits being generated by other local projects; however, the project would cumulatively add to the economic and fiscal benefits being generated in the region in the long term. It would also help offset of adverse economic effects that were or could be generated by certain projects over time. Overall, the proposed project would not have an adverse cumulative economic impact in the short term, but would have a cumulative economic benefit in the context of local economic and fiscal conditions in the long term.

12.2.10.3.2 Cumulative Effects on Local Property Values

The impact of the proposed pike eradication efforts on property values in unknown and has not been quantified as part of this EIR/EIS due to the speculative nature of such an analysis. As such, the analysis acknowledges that an adverse impact on property values could occur, but that it would be a short-term, less-than-significant, impact that would last only during the implementation period. None of the cumulative projects are likely to adversely affect property values in the region. In fact, many of the projects could have a positive effect on property values, including the Grizzly Ranch Development and Woodbridge projects, which entail the development of new homes (with relatively higher values than existing homes) and, in the case of Grizzly Ranch, a golf course that can generate amenity values from the local housing base. In addition, projects that improve local infrastructure, such as the Plumas County Water Treatment Plant and recreational improvements at Lake Davis, could also positively influence property values. Potential increases in local property values attributed specifically to these cumulative projects would be in addition to overall trend of increasing property values throughout the region and state over the past several years. As such, any potential short-term decreases in property values attributed to the Proposed Project/Proposed Action or any of the other action alternatives would not have a cumulatively considerable adverse impact on property values in the region because local property values are generally expected to increase over time. No cumulative impact would occur.

12.2.10.3.3 Cumulative Effects on Recreation Economic Values

The net economic values attributed to recreation at Lake Davis are directly related to the level of recreation visitation to the reservoir and the quality of the experience. Based on anticipated increases in recreation visitation under the Proposed Project/Proposed Action and other alternatives, these values are expected to increase with implementation of the project, resulting in beneficial impacts over time. For the most part, none of the cumulative projects are expected to adversely affect recreation levels and/or quality at Lake Davis, except for the prior eradication attempt in 1997. Because the project is expected to generate an increase in

recreation economic values and related benefits, it would be expected to partially or fully offset the adverse impacts of the 1997 treatment on recreation values, and would not have an adverse cumulative impact.

12.2.10.3.4 Cumulative Effects on Water Supply Costs and Benefits

The proposed pike eradication project is not likely to result in significant changes to groundwater levels or quality, and therefore groundwater supplies, near Lake Davis, However, it would also temporarily reduce surface water supplies downstream from Grizzly Valley Dam. With implementation of mitigation measures recommended in Section 13, Public Services of the EIR/EIS that call for replacement downstream water supplies to be provided by the DFG (if necessary), there would be no economic costs (or impacts) incurred by local residents and /or downstream users. Therefore, no cumulative economic effects would occur in these contexts under any of the action alternatives.

However, there is also the potential that the proposed pike eradication treatment would temporarily preclude the City of Portola and GLRID from using water from Lake Davis as a domestic water supply source. Future availability of Lake Davis for domestic water supplies is dependent primarily on construction and approval of a new treatment plant and a surface water elevation at Lake Davis of 5,750 feet (16,276 acre feet), which is the minimum required for treatment plant operation. Assuming that the costs of Lake Davis water are lower than current groundwater costs, the City and GLRID could be required to incur these higher costs until the proposed treatment plant is complete and the DHS allows reservoir water to be used. Based on its temporary nature, this economic impact is considered less than significant. None of the cumulative projects have the potential to further delay future use of Lake Davis as a domestic water supply source, thereby subjecting the City of Portola to relatively higher water supply costs for a longer period of time. Therefore, the temporary water supply cost impact that could occur under all of the project alternatives would not have a cumulatively considerable effect on these costs. No cumulative impact would occur.

12.2.10.4 Cumulative Effects for Alternative A

The cumulative economic effects of Alternative A would be the same as those described for the Proposed Project/Proposed Action (see Section 12.2.10.3)

12.2.10.5 Cumulative Effects for Alternative B

The cumulative economic effects of Alternative B would be similar to those described for the Proposed Project/Proposed Action (see Section 12.2.10.3).

12.2.10.6 Cumulative Effects for Alternative C

The cumulative economic effects of Alternative C would be similar to those described for the Proposed Project/Proposed Action (see Section 12.2.10.3)

12.2.10.7 Cumulative Effects for Alternative D

The cumulative economic effects of Alternative D would be similar to those described for the Proposed Project/Proposed Action (see Section 12.2.10.3)

12.2.10.8 Cumulative Effects for Alternative E

The cumulative economic effects of Alternative E would be similar to those described for the Proposed Project/Proposed Action (see Section 12.2.10.3)

12.2.11 Environmental Impacts Summary

A summary of the quantitative results of the economic and fiscal analysis of the Proposed Project and alternatives is presented in Tables 12.2-1, 12.2-2, and 12.2-3 below. The values presented in Tables 12.2-1 through 12.2-3 represent the short-term, long-term, and overall levels of economic activity generated under each of the project alternatives, respectively. The purpose of the analysis was to examine potential economic effects of the Proposed Project and alternatives, given long-term and short-term beneficial and adverse effects. The analysis cannot and does not attempt to quantify short-term economic effects of the project alternatives on specific individuals, businesses, or other entities in the local Portola area.

Estimating such effects at this time is not possible. In addition, these economic impacts are not considered significant environmental impacts for which feasible mitigation is required under CEQA. (See CCR, tit. 14, §§ 15064 and 15131; and Lucas Valley Homeowners Association, Inc. v. County of Marin (1991) 233 Cal.App.3d 130 (CEQA does not require lead agency to analyze potential changes in property values associated with project).)

The issues of whether and how to address these economic impacts are matters of policy for the State Legislature to consider and determine. However, if the DFG decides to approve a project to eradicate pike from Lake Davis and its tributaries upstream, it will have a forensic accountant collect economic data from willing individuals, businesses, and other entities both before and after treatment. In addition, the DFG will have a real estate appraiser collect local real estate market data both before and after treatment and analyze the data in comparison to other similar markets to determine whether or to what extent the project has affected real property values. They could also collect data from 1997 and thereafter to look at impacts of the 1997 treatment on those individuals, businesses, and other entities. The economic data collected by the forensic accountant and the real estate analysis would be summarized in a report. The report would be given to the State Legislature for its consideration in determining whether or how to address any short-term financial impacts the approved project has on local Portola area individuals, businesses, and other entities. (It is important to note that while the report would help identify short-term financial impacts to specific local individuals, businesses, and other entities, its value in evaluating the overall economic impact to the local Portola economy would be limited. It would not consider the potential long-term benefits of an approved project. In addition, it is unlikely that all local area individuals, businesses, and other entities would submit to an examination of their economic data by a forensic accountant. For these reasons, the results are not expected to provide a complete picture of the local economic impacts of an approved project.) In the meantime the DFG will continue

to discuss this issue with the State Legislature and the community to see if there are other potential mechanisms for addressing these concerns.

Table 12.2-1. Summary of Short-Term Average Annual Economic and Fiscal Effects Across Project Alternatives (2007-2011) [1,2,3]

Impact Type	Existing Conditions	NP/NA	PP/PA	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Output	$2.20	$2.04	$1.61-$1.73	$1.61-$1.73	$1.42-$1.66	$1.67-$1.73	$1.76	$1.37-$1.66
Income	$1.29	$1.19	$0.94-$1.01	$0.94-$1.01	$0.83-$0.97	$0.98-$1.01	$1.03	$0.81-$0.97
Employment	49.9	46.3	36.6-39.3	36.6-39.3	32.2-37.7	38.0-39.3	40.0	31.2-37.7
Fiscal Revenues (Absolute $)	$47,300	$43,900	$34,700-$37,300	$34,700-$37,300	$30,600-$35,700	$36,000-37,300	$38,000	$29,600-$35,700
Economic Values (Recreation)	$6.19	$5.75	$4.54-$4.88	$4.54-$4.88	$4.00-$4.67	$4.71-$4.88	$4.97	$3.87-$4.68

Source: ENTRIX, 2006; CSUC, 2006

[1] Monetary values presented in constant 2005 dollars.

[2] Monetary values presented in millions of dollars, except for Fiscal Revenues, which are reported in absolute terms.

[3] Values presented in the table for the project alternatives represent average annual undiscounted values over a 5-year timeframe (2007-2011).

Table 12.2-2. Summary of Long-Term Average Annual Economic and Fiscal Effects Across Project Alternatives (2012-2026) [1,2,3]

Impact Type	Existing Conditions	NP/NA	PP/PA	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Output	$2.20	$1.77	$2.44	$2.44	$2.44	$2.44	$2.45	$2.44-$2.45
Income	$1.29	$1.04	$1.43	$1.43	$1.43	$1.43	$1.43	$1.43
Employment	49.9	40.3	55.5	55.5	55.5	55.5	55.6	55.4-55.6
Fiscal Revenues (Absolute $)	$47,300	$38,200	$52,600	$52,600	$52,600	$52,600	$52,800	$52,500-$52,700
Economic Values (Recreation)	$6.19	$5.00	$6.89	$6.89	$6.88-$6.89	$6.89	$6.90	$6.88-$6.90

Source: ENTRIX, 2006; CSUC, 2006

[1] Monetary values presented in constant 2005 dollars.

[2] Monetary values presented in millions of dollars, except for Fiscal Revenues, which are reported in absolute terms.

[3] Values presented in the table for the project alternatives represent average annual undiscounted values over a 15-year timeframe (2012-2026).

Table 12.2-3. of Overall Average Annual Economic and Fiscal Effects Across Project Alternatives (2007-2026) [1,2,3]

Impact Type	Existing Conditions	NP/NA	PP/PA	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Output	$2.20	$1.84	$2.23-$2.26	$2.23-$2.26	$2.19-$2.24	$2.25-$2.26	$2.28	$2.17-$2.25
Income	$1.29	$1.08	$1.31-$1.33	$1.31-$1.33	$1.28-$1.32	$1.32-$1.33	$1.33	$1.27-$1.32
Employment	49.9	41.8	50.8-51.5	50.8-51.5	49.7-51.0	51.1-51.5	51.7	49.4-51.1
Fiscal Revenues (Absolute $)	$47,300	$39,700	$48,200-$48,800	$48,200-$48,800	$47,100-$48,400	$48,500-$48,800	$49,100	$46,800-$48,500
Economic Values (Recreation)	$6.19	$5.19	$6.30-$6.39	$6.30-$6.39	$6.16-$6.33	$6.34-$6.39	$6.42	$6.13-$6.35

Source: ENTRIX, 2006; CSUC, 2006
[1] Monetary values presented in constant 2005 dollars.
[2] Monetary values presented in millions of dollars, except for Fiscal Revenues, which are reported in absolute terms.
[3] Values presented in the table for the project alternatives represent average annual undiscounted values over a 20-year timeframe (2007-2026).

Table 12.2-4 is a summary comparison of the impacts of No Project, the Proposed Action, and Alternatives A through E.

Table 12.2-4. Summary Comparison of Economic Impacts of Alternatives

Affected Resource and Area of Potential Impact	Alternative													
	No Project Compared to Existing Conditions		Proposed Project		A		B		C		D		E	
	Short Term	Overall	Short Term	Overall	Short Term	Overall	Short Term	Overall	Short Term	Overall	Short Term	Overall	Short Term	Overall
1. Local Economic Activity (Output, Income, and Employment)	B	A	A	B	A	B	A	A	A	B	A	B	A	A
2. Fiscal Resources	B	A	A	B	A	B	A	A	A	B	A	B	A	A
3. Local Property Values	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*	*nd*
4. Economic Values – Recreation	B	A	A	B	A	B	A	A	A	B	A	B	A	A
5. Water Supply Costs and Benefits	N	N	A	A	A	A	A	A	A	A	A	A	A	A
6. Statewide Economic Activity	A	A	na	na	na	na	na	na	na	na	na	na	na	na

Key:

A = Adverse Impact (NEPA)
B = Beneficial Impact (NEPA)
N = No Impact (NEPA)
na = Not Applicable (Potential statewide economic impacts associated with pike escapement were only analyzed for the No Project/No Action alternative.)
nd = Significance Not Determined